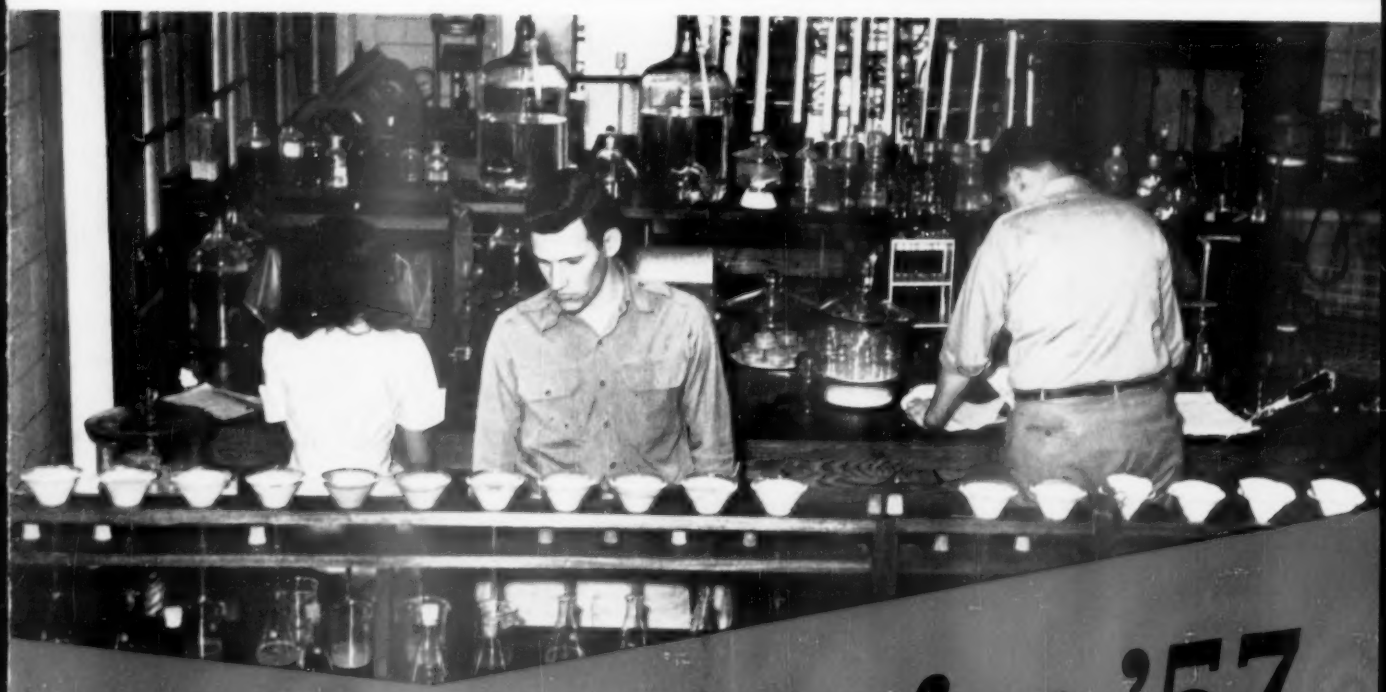
JANUARY, 1957 • 20c

Better Farming Methods

For Vo-Ag Teachers, County Agents, Soil Conservationists, and Extension Specialists



A Review of

Ag Chemicals for '57

for all Ag Leaders

Prevention or Treatment—

WITH ONE SHOT!

Prevention of disease is always a primary aim of successful animal management, particularly during periods of stress or adverse weather conditions.

That's why it's significant that so many experienced dairymen, cattlemen and other livestock owners rely on INJECTION BICILLIN. They know the long-lasting, effective blood levels of INJECTION BICILLIN achieve prevention, *without* time-consuming, costly, frequent dosage schedules.

They also know that, where the press of market schedules or other activities makes an adequate prevention program impossible, they can rely on INJECTION BICILLIN FORTIFIED for powerful, fast-acting *treatment*.

WAVY

For One-Shot Prevention—

INJE

BICI

(*Benzathin*

Prolonged blood levels, lasting

For One-Shot Treatment—

INJECTION

BICILLIN® FORTIFIED

(*Benzathine Penicillin G and Procaine Penicillin G*)

High, *immediate* penicillin blood levels to fight infection; *prolonged* levels to reduce possibility of relapse!

Protect your profits with Wyeth products!

AVAILABLE FROM YOUR ANIMAL HEALTH PRODUCTS SUPPLIER

"NASCO" IS A GOOD NAME TO KNOW

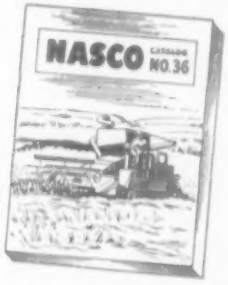
IOWA PORTA SCALE

Heavy gauge steel, welded construction. Aluminum finish. 48" long, 20" wide, 56" high. Accurate weight indicated by proven steelyard beam balance. Easy to read. One side of beam has 2-lb. marks up to 350 lbs. Opposite side has ½ and 1-lb. marks up to 70 lbs. Ideal for use in Vo-Ag departments to check weights for boys who have pig projects.

Wt. 145 lbs. **C653** NASCO price $79.95

SHOP YOUR "NASCO" CATALOG

For All Your Specialized Needs



You save TIME and BOTHER — when you shop "NASCO" for all class, shop, laboratory or field needs. In most cases you'll find what you want in the big "Nasco" Catalog No. 36.

"Nasco" specializes in supplying the exacting needs of Vo-Ag Teachers, County Agents, Extension Men and other Agricultural Leaders. If you don't have the 1956-57 "Nasco" Catalog, write for FREE copy of Catalog No. 36 TODAY.

The International Agricultural Leaders' Supply House

; Jig Saw

PAGES

sted this versa-
se. Cuts circles,
n wood, metal,
t at a 2x4. Makes
inside cuts. Air
off guide line.
Blades quick and easy to change. Pistol grip for cool handling and high sawing accuracy. This is not a cheap vibrator type, but has a powerful especially built universal AC/DC 115 V. Motor with Oilite bearings and hardened steel gears to achieve reciprocal cutting action.

Order **T535-D500** Dalton Electric Saw (incl. 6 blades) wt. 6 lb. Reg. Price $48; NASCO special price $43.20

Order **T536-D401** Six extra Coarse Tooth Wood Cutting Blades $1.80

Order **T537-D402** Six extra Fine Tooth Wood Cutting Blades $1.80

Nasco sells thousands of these famous Hanson No. 60 lb.-two Revolution Dairy Scales each year. Second revolution indicates on draw bar, doubles the capacity of the scale. Constructed from heavy sheets of steel throughout and equipped with heavy temperate steel springs and milled gravity rack. The fixed pointer can be adjusted by a set screw and the loose pointer by a thumb nut at the center. Each scale is finished in attractive and durable enamel and equipped with a hook. For the best buy, buy all your scales from Nasco. Regular Price $7.95 each. Shipping wt. 4 lbs.

Order B3-60
Special Each $6.95
12 or more @ $6.75

NASCO Proudly Presents Revolutionary New Garver Super Series Babcock Testers

Scientifically designed by Garver electronics engineers, the "Super" series represents the ultimate in Babcock testers. Garver "Supers" have everything, and they duplicate or exceed the performance of testers costing much more.

Construction is heavy cast aluminum; testers are dynamically balanced for smooth operation. They start fast but smoothly, without a trace of jerk to injure menisci or bottles.

Outstanding features include:

Variable speed control
Dual starting speeds for light and heavy loads
Fingertip stopping brake
Thermostatic heat control
Dual switches for motor and heater
Mounted Thermometer
Pilot light that goes on whenever heater or motor is on
"Visiscope", the unique electric speed indicator, the most accurate known.

Control units and switches are housed in heavy cast aluminum box atop tester lid. All models are wired for 110-120 volts, 60 cycles (other voltages and frequencies available at slight extra cost) and operate by a single cord. Hand and combination hand-electric models also available. Sizes from 8 to 36 bottles for 6" or 9" glassware. Each unit guaranteed.

MODEL	SIZE	GLASSWARE	PRICE
Super 556	24 Bottle	6"	$178.50
Super 66	36 Bottle	6"	175.50
Super 549	12 Bottle	9"	184.25
Super 559	24 Bottle	9"	186.00
Super 699	36 Bottle	9"	187.50

National Agricultural Supply Company
FORT ATKINSON, WISCONSIN

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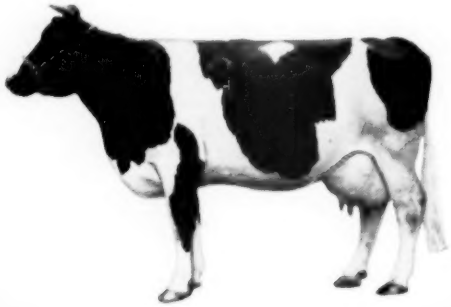

Wyeth

Philadelphia 1, Pa.

For One-Shot Prevention—

INJECTION

BICILLIN®

(*Benzathine Penicillin G*)

Prolonged blood levels, lasting 5-7 days, from a single shot!

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Wt. 145 lbs. **C653** NASCO price $79.95

Jr. Germinator Now Only $22.95

Just the right size for practical class and farm seed testing. Use it for classroom demonstrations—have students bring seed samples from home. Temperature and humidity accurately controlled. Foolproof operation. So fast, some seeds sprout in less than 24 hours. Helps teach farmers to test **all** seeds to avoid risking a year's income. Saves extravagant over-planting of costly seed just to "get a stand." Made of aluminum, 13x9x5", holds six 4" Kimpack squares to test a large variety of seed in a short time. Makes a splendid plant starter, too.

Farmers depend on you to introduce improved practices. Now you can show them an advanced technique to make sure, at low cost, they plant each lot of seed at just the right rate for optimum plant population.

Order **G202** Junior "55" Germinator, Special NASCO School Price $22.95

NASCO-Hanson Dairy Scales

Nasco sells thousands of these famous Hanson No. 60 lb.-two Revolution Dairy Scales each year. Second revolution indicates on draw bar, doubles the capacity of the scale. Constructed from heavy sheets of steel throughout and equipped with heavy temperate steel springs and milled gravity rack. The fixed pointer can be adjusted by a set screw and the loose pointer by a thumb nut at the center. Each scale is finished in attractive and durable enamel and equipped with a hook. For the best buy, buy all your scales from Nasco. Regular Price $7.95 each. Shipping wt. 4 lbs.

Order B3-60
Special Each $6.95
12 or more @ $6.75

NASCO Vo-Ag Jig Saw

Vo-Ag instructors suggested this versatile saw for farm shop use. Cuts circles, curves, straight lines in wood, metal, composition, etc. Will cut a 2x4. Makes its own starting hole on inside cuts. Air stream blows sawdust off guide line. Blades quick and easy to change. Pistol grip for cool handling and high sawing accuracy. This is not a cheap vibrator type, but has a powerful especially built universal AC/DC 115 V. Motor with Oilite bearings and hardened steel gears to achieve reciprocal cutting action.

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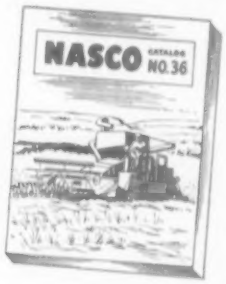

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National Agricultural Supply Company
FORT ATKINSON, WISCONSIN

"It doesn't matter how old you feel, Jasper. You can't collect on your Social Security until you reach 65."

Coming Events

January 8-10—National Turkey Federation Convention, Cincinnati, O.

January 10-11—Third Annual Mississippi Insect Control Conference, Mississippi State College, State College.

January 10-12—Eleventh Annual Meeting of the Northeastern Weed Control Conference, Sheraton-McAlpin Hotel, New York City.

January 11-19—National Western Stock Show, Denver, Colo.

January 14-18—1957 Pennsylvania Farm Show, Harrisburg, Pa.

January 25-February 3—Southwestern Exposition and Fat Stock Show, Fort Worth, Tex.

February 4-7—Eleventh Annual Convention, National Association of Soil Conservation Districts, St. Louis, Mo.

February 8-17—San Antonio Exposition, San Antonio, Tex.

February 15-17—Fact Finding Conference & Junior Fact Finding Conference, Municipal Auditorium, Kansas City, Mo.

February 22—First Egg Quality Conference, Pennsylvana State Univ.

February 26-27—Poultry Housing Conference, Penn State University, University Park, Pa.

March 13—Twelfth Distillers Feed Conference, Sheraton Gibson Hotel, Cincinnati, O.

March 21-22—University of Maryland 1957 Nutrition Conference for Feed Manufacturers, Shoreham Hotel, Washington, D. C.

May 20-31—Ninth General Conference of the International Federation of Agricultural Producers, Purdue University, Lafayette, Ind.

June 23-26—50th Annual Meeting, American Society of Agricultural Engineers, Michigan State University, East Lansing.

July 20-23—National Audio-Visual Association Convention, Chicago.

Better Farming Methods

Professional Magazine for Leaders Who TRAIN and ADVISE Farmers.

January, 1957 Vol. 29, No. 1

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MEMBER NATIONAL AUDIO-VISUAL ASSOCIATION NAVA

PUBLISHED MONTHLY ON THE 1ST OF THE MONTH BY WATT PUBLISHING COMPANY, MOUNT MORRIS, ILLINOIS

BPA NFP

IN OREGON, Darrell Perry, lineman, helps bring some 52 miles of telephone line into Powder River Valley. This $50,000 project connected 56 ranch families with the world and helped them overcome fire, grazing and water problems.

IN KANSAS, Mrs. Dorothy Veach, operator in Abilene, helps serve 200 rural customers each day. Her home is a 240-acre farm. Because of her background, she understands farm problems. "That's why I always try to be extra helpful on rural calls," she says.

IN ARIZONA, Cecil J. Smith, right, manager at Willcox, spends a good deal of time out in the fields talking to farmers and cattlemen. From such conversations came telephone service to farmers like J. J. McAllister, left, who lives 14 miles from town.

BEST TELEPHONE CROP IN TEN YEARS!

More telephones were added in rural areas during 1956 than any year in the past decade. Across the land, thousands of telephone men and women worked together to bring you more and better service.

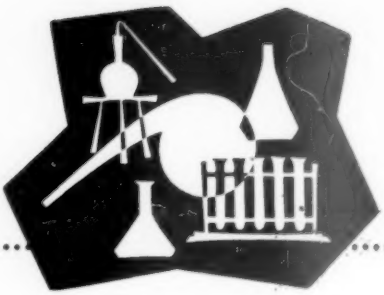
These people are typical of those in the telephone office in your town . . . and those out on the lines and in our laboratories. They work toward a common goal—more and better rural service. During the past year this Bell System team brought telephone service to about 350,000 customers and improved service for hundreds and thousands more. Truly they are working together to bring people together.

We'll continue that job in the years to come.

Working together to bring people together

BELL TELEPHONE SYSTEM

Keeping up in AGRICULTURE



Place Fertilizer Correctly

A method of applying fertilizer makes as much as 103 percent difference on onion yields and up to 50 percent on spinach yields according to scientists at the University of Michigan. Their experiments, on muck soils, show that fertilizer for these two crops should be placed in a band two inches below and one inch to the side of seeds.

Study Roostless Hen Houses

Houses without roosts are just as satisfactory as those with roosts from the standpoint of egg production, feed requirement, gain in body weight, and death loss. These facts were brought out in a recent hen house management study by Arkansas Experiment Station. Researchers found no consistent difference in feed requirements per dozen eggs between laying flocks provided with roosts and those with no roosts.

Use Nitrogen Fertilizers on the Range

In tests by USDA research men at the Northern Great Plains Field Station, they found that application of nitrogen can lead to rapid range improvement. Such improvement helped provide longer grazing periods and was an aid in better distribution of livestock over grazing areas. Even though the price of hay might not make nitrogen applications profitable, added weight gains in livestock grazed could more than pay the fertilizer costs. Nitrogen was applied as ammonium nitrate.

Inject Hens with Streptomycin

Monthly injections of breeder hens with streptomycin when hatching eggs are collected greatly reduces the transmission through the egg of pleuro-pneumonia-like organisms, one of the principal factors responsible for CRD (Chronic Respiratory Disease). It now appears that this action of the streptomycin is enhanced when a combination of penicillin and streptomycin is added to the hens' feed, according to pathologists of the Merck Sharp & Dohme Research Laboratories. Inasmuch as the observations were based on only 770 birds, no definite conclusions can be drawn at this time. The preliminary results, however, appear to be sufficiently significant to warrant further investigation.

Pork Quality Not Affected by Aureomycin

Aureomycin supplement firms the back fat slightly, and boosts the protein content of the hog carcass a little bit. But it has little effect on the dressing percentage, length of carcass, percentage of lean cuts, fat back thickness, or amount of fat around internal organs. These are conclusions from a feeding trial conducted by research workers at the University of Wisconsin. They conclude that the effects of antibiotic supplement on the pork quality is not important one way or the other, there is not much benefit, and no harm.

Use Phosphate in Dairy Barns

Michigan State University reports that a half-pound of phosphate fertilizer per cow per day, spread in and a short distance behind the gutter in the dairy stanchion barn is better than using lime on the barn floor. Lime releases nitrogen and makes the barn floor slippery, while phosphate ties up the Nitrogen. This not only gives the cows better footing but it cuts down the smell in the barn and makes the manure worth more in the spring.

Phosphorus May Be Key to Bloat

A report from the South Carolina Agricultural Experiment Station indicates that an adequate supply of phosphorus in the soil may be a good way to reduce or eliminate bloat in farm animals. If the phosphorus supply is low in relation to the nitrogen supply, both elements needed in proper supply for plants, some legumes then build up chemical compounds that have been identified with certain types of bloat. Indications are that an adequate supply of soil phosphorus may prevent this build-up.

Treat Johnsongrass with Oil

Agronomists at the Texas Agricultural Experiment Station say you can eradicate 98 percent of the Johnsongrass clumps in cotton and cornfields in a single season. Use oil on the crowns four to six times at about 10-day intervals in the growing season. Cost for controlling infestations of five percent or less will range from $8 to $15 an acre. To increase effectiveness of the diesel oil treatment, add one-quarter pint of HCA and one-fifth pint of dalapon per gallon. The method is reliable and results in no crop injury.

A Word of Caution on Thyroprotein

Recently completed Federal-State experiments in the use of thyroactive materials to stimulate milk output in dairy cows indicate that the practical value of such drugs is limited. Many previous trials have shown that thyroprotein, available to dairymen in commercial feeds for a number of years, increased milk production as much as 20 percent in some cows for short periods. Total milk produced for the entire lactation, however, was not increased. More recent experiments have shown widely varied responses among individual animals. The tests also demonstrated once more the seemingly inevitable drop off in milk output once the drug is removed from the diet. These results, along with other findings, have convinced researchers that use of the drug has little place in average dairy-farm operations.—*End*

CERTIFIED ALFALFA SEED COUNCIL

Declaration of Principles

The Certified Alfalfa Seed Council carries on a single-purpose, non-profit endeavor on behalf of all segments of the certified alfalfa seed industry, including growers, processors, distributors and the consumer.

The Council endeavors to promote a wider knowledge and better understanding of the production and use of certified improved alfalfa varieties, and to assist agricultural leaders in distributing and disseminating information of the value and use of these improved alfalfa varieties.

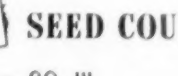
The Council does not:

1 Attempt to influence legislation or legislative bodies.

2 Concern itself with questions of prices or marketing nor does it give advice on such matters.

3 Attempt to favor one area or district of production over any other area or district of production.

4 Have any purpose or object except those specifically set out in this declaration of principles.

CERTIFIED ALFALFA  **SEED COUNCIL**

P.O. Box 8169, Chicago 80, Ill.

Spotlighting COMMUNICATION METHODS

to help ag leaders get farm people to accept new ideas

By Gerald McKay
Audio-Visual Specialist
University of Minnesota

Don't Burn the House

The old story told in grammar school of how people first learned to cook pork illustrates a principle we might well remember as we disseminate information to farm people.

A father and his son found that a pig tasted good after it had been cooked in a fire that burned their house. Thereafter the house was rebuilt and burned often. And soon other houses in the neighborhood burned to the ground. Houses were built smaller and smaller. Before long, however, people learned that the pig could be cooked by merely building around it a little fire which was kept under control.

It is true the total number of practices adopted by farm people will increase with many exposures through several communication channels. We have been teaching this for many years. It is equally true, however, that by using a carefully selected and controlled number of communication media, our farm people will also adopt many of the practices that we teach. In the end, the net result may be more practices adopted per unit of our work when we use carefully selected media. And our efficiency probably will be considerably higher.

Pointers for Radio Programs

According to a survey of the British Broadcasting Company, the following will help, but not necessarily insure, intelligibility of radio programs:

1. Limit the number of main points to six or less .
2. Give a clear summary at the beginning or end, or both.
3. Keep your style lively and lucid. Make paragraphs easy to follow, grammatically vivid and humorous.
4. Keep both subject matter and treatment concrete. Have less than five abstract nouns and more than five active verbs in an average sample of 100 words.
5. Illustrate any principle or abstract point. Illustrations are often recalled while the points they were intended to explain may be missed.

Qualities which obstruct intelligibility according to the BBC studies were: Too speedy delivery; difficult vocabulary; flowery or literary metaphors; overlong sentences; and complex sentence structure.

Plan "Leads" Around "Urges"

Whether it's a lead for your news story, radio program, television show or the main caption of your exhibit, keep the basic human urges in mind. They could be labeled, PRIDE, PROTECTION, PROFIT AND PLEASURE Any one of them might suggest an effective punchline. They are basic to human nature and will always attract attention.

A Prop for TV

If your subject lends itself to a progression of steps toward a goal, try building actual steps out of cardboard boxes. Envelope or shoe boxes will do nicely. Put a label on each one as the story progresses to indicate each step toward the goal.

The boxes could be covered with light brown wrapping paper to make them uniform in color.

Steps on a ladder will serve the same purpose. Some means of fastening each step to the ladder as the story progresses must be planned.

Visualize Your Report

Good reports are even better when they are visualized. We heard about a Nebraska county agent who made his annual report to the commissioners and extension council a visual one. During the year he kept his 35 mm camera with him and photographed anything in which he thought these two groups would be interested.

He didn't limit his photography to agricultural activities, but included home demonstration and 4-H activities, as well.

When annual report time rolled around, this agent was able to tell an excellent extension story to his council and commissioners. He used the slides also at meetings of service clubs, church groups, and farm organizations. People in the county had a good understanding of agricultural extension work.

This technique has doubtless been repeated over and over by vo-ag teachers and agents alike. And it will stand more repetition.

New Use for Saran Wrap

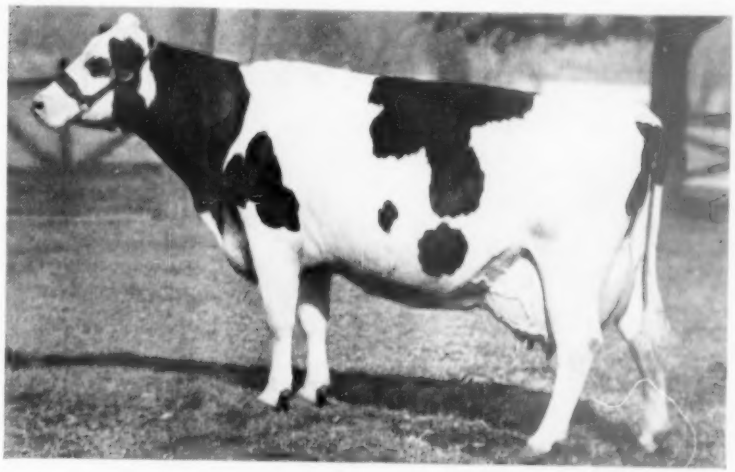
From Ray Erwin, ag instructor, Stillwater, Minn., comes this suggestion: Use saran wrap to take the place of common artists' acetate. It is good to cover soil samples or profiles, protect weed and seed mounts, and wrap hay specimens. A wax pencil is effective on it and erasing is simple. The "clinging" quality of

Dr. Luther Pickrel, agricultural economist at the University of Minnesota, illustrates one use of the flannelgraph. With this enlarged map of the United States he explains the interdependence of regions.

THE CHAMP—*Haven Hill Crescent Gewina Count*

New Butterfat Record Set

Byron, Ill., Nov. 26—A new world's record of 1,523 lbs. butterfat in a 365-day test has been established by Gewina, right, owned by R. B. McLaughlin. The old record of 1,511 lbs. butterfat had stood since 1953. Gewina is 8 years old and is rated "Excellent" with 93 points. She was second high on the National Honor List in 1953 and again in 1955.



WHAT MAKES A WORLD'S CHAMPION?

Owner R. B. McLaughlin, Slingerland Rock River Farms, Byron, Illinois.

"Attention to little things"

Emphasizing the importance of attention to detail in the breeding, management, and feeding of dairy cows, Mr. McLaughlin points out: "One example of 'little things' that are mighty important are the trace minerals in the ration. Although our Champion gets trace minerals in other feeds, I want to be sure she gets them in her salt, too. That's why she always has Morton T-M in front of her all the time. Also, we feed T-M to the entire herd,* free choice. In my opinion, Morton T-M is the finest. We use no other brand. It works like magic, so little does so much."

**Slingerland Rock River Farms has a herd of 170 head of registered Holsteins, with a milking herd of 110 cows.*

MORTON Trace-Mineralized SALT

Slingerland Rock River Farms' milking barns and calf pens are equipped with the attractive new yellow and blue Morton Salt Bowls.

Although a small part of any livestock ration, Morton T-M Salt is still the best and most economical way to be sure your animals get the trace minerals they need. So, whether you feed dairy cows, beef cattle, hogs or sheep, it makes plain common sense to feed Morton T-M Salt, free choice, loose or in blocks. It's the finest Trace-Mineralized Salt in the market.

New Morton Salt Bowls • Rugged reinforced Permelite • No-waste rim • Rustproof fittings • Easily attached to iron or wood stanchions, or to walls • Ideal for handy feeding of economical loose salt.

. . . use your local barber shop as an outlet for FFA and 4-H information.

saran wrap makes mounting easy, and best of all, the price is low. Some of this material, and a stapler, around the ag room or county agent's office can be quite versatile.

Outlets for Ag Information

Have you ever tried leaving a timely bulletin or brochure about 4-H or FFA in your local barber shop? Chances are you'll reach a new audience and certainly will increase your readership. Other possibilities are the dentists' and doctors' offices. A little discussion when you ask permission to leave the material will give your program a boost, too.

Include Your Name When Writing Stories

When you send a news story to your local editor, identify yourself; be proud of the story. Although you know the editor personally, he will appreciate having your telephone number, too, with the story in case he wants to ask you something about it. He's probably busy and may throw the story in a waste basket rather than look up your number.

Teach Cuts of Meat

Both in vo-ag classes and 4-H, the identification of retail meat cuts is important. A new set of 82 color slides to help do the teaching is available from the National Livestock and Meat Board, Chicago 5, Illinois. The slides come packed in a neat carrying case.

Improve Photos by Cropping

When enlarging, the composition of most pictures can be improved by cropping or leaving out certain portions. This is true if the photo is for illustrating a news story, for an exhibit or for a television show.

Keep these points in mind when you enlarge:

1. Enlarge only the subject you want.
2. Keep in mind the purpose. A news shot should be cropped closer than a picture for your office wall.
3. Leave out distracting shapes or confusing lines.
4. If the photo is to indicate direction, leave space for the subject to look or move toward.
5. Don't enlarge parts of the negative that may be incorrectly exposed or otherwise inferior.

If you mark the cropping lines for someone else, put them on a contact print of the negative. If you must mark the negative, keep your marks on the very edge.

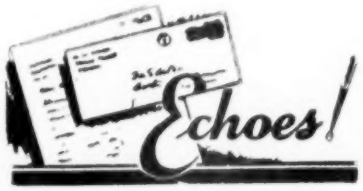
Rural TV Survey Indicates Viewer Approval

Extension membership in a New York county was surveyed recently for reaction to "Neighborhood Lane," a farm television show. Of the 212 responses, 128 said they listened and 84 said they did not. Of those who viewed the program regularly, all indicated the shows were interesting, helpful, and should be continued.

Among the suggestions for improvement of the weekly shows were:

1. Use more local people.
2. Use one host to tie the program together.
3. Demonstrate as much as possible.
4. Select subjects that are seasonable.
5. Let people know ahead of time what the program will be.
6. Use animals.

From "Video News" prepared by Jim Veeder, Extension Television Specialist, Cornell University.—*End*



Comments on November . . .

Dear Mr. Schaller:

I read your editorial, "A Good Citizen Votes," in the November issue of Better Farming Methods.

This is one of the best editorials I have ever read on this subject. It's too bad that it could not be carried on the front page of every newspaper in the country. One reads how people in Poland and Hungary are willing to die, if necessary, to gain freedom, yet too many Americans can't even be bothered to vote to retain what we have.

Keep up the good work.—*L. V. Benjamin, Boise, Idaho*

A Thoughtful Question . . .

Dear Sir:

Though not a subscriber, I have been receiving your publication for quite some time now.

As the owner and operator of leased grain land, I find your publication of little value to me. I feel that I have pretty well reached the saturation point, under present conditions, as regards the production and income side. Since almost 75 percent of my tax load and operating expense is represented by taxation, I have practically no control over my production costs. I receive plenty of free propaganda supporting the Benson and Schuman approach to farm problems.

One day this week, The Wall Street Journal quoted from a speech made by the President of Jarman Shoe Company. His recommendation to shoe retailers was "increased markups" and "concentration of sales effort on higher price lines." In line with past performance, Mr. Benson and Mr. Schuman would have told farmers to deluge the market with cheap bushels of grain and that if they could produce enough bushels, they could make some profit.

Why should there be such widely divergent philosophies in an economy supposed to be impelled by the profit motive?

Starting with an accurate parity formula, parity for farmers should have the same status in our controlled, or managed—if you prefer, economy, as cost-of-living wage contracts organized labor has with employers.—*J. A. Bradley, Taylorville, Ill.*

Bob Guzewich, associate county agent, Ulster county, New York, was recently honored by the New York State Seed Association. He received their award and a $100 check for his cooperation in conducting research plots and demonstrations on vegetables and field crops with seedsmen and the college. At the left is Joseph Robson, Robson Quality Seed, Inc.

The December Editorial . . .

Dear Mr. Schaller:

Again I am impelled to write you and express my appreciation for your wonderful editorial in the December issue of the Better Farming Methods.

As a layman who aspires to be of help and service to others, I certainly admire your ability and willingness to give so much thought and time to these splendid editorials. All too often this type of thing is not found in our secular and trade magazines.

I am sure that the editorial would be a real inspiration to many people, and certainly such inspiration is needed at this particular time.

My very best wishes to you and yours at this Christmas season.—*L. B. Fidler, special supervisor for vocational agriculture, Columbus, O.*

Dear Herb:

Just a note to tell you that your editorial in this month's issue of Better Farming Methods is one of the most inspirational I have read in a long time. It is a masterpiece of thought and composition and comes at a most opportune time. I trust many agents and others will read it.

Keep up the good work, and best wishes for a pleasant holiday season. —*Bryan Phifer, U.S. Department of Agriculture*

Dear Sir:

We have noticed your very fine article "Be Not Afraid" in the December issue of Better Farming Methods.

Our Soil Conservation District would like permission to reprint this fine message in the local paper, *The Hazen Star*, as a Christmas message to the people of our area.

Kindly inform us as soon as possible whether we have your permission to copy this article.—*Leonard A. Lyngstad, work unit conservationist, Hazen, N.D.*

Dear Herb:

I have just finished reading your editorial in your December issue. It is actually more than a good editorial; it is a sermon. It is the message which we need in times such as these and you are to be congratulated for departing from the usual subjects in order to convey your message in such well chosen words to the agricultural leaders of our country.—*Kenneth L. Coombs, state 4-H club leader, Kingston, R.I.*

Dear Friend Schaller:

Your December issue has just reached me, and once again I want to congratulate you on your publication.

I am particularly interested in your interesting story "Be Not Afraid," which I shall see is read by a great many of my friends.—*John A. Gunn, Toronto 1, Ontario*

★

Soil High in Nitrogen? Legumes Still Take It From Air

Experiments at Iowa State College found that a high level of nitrogen in the soil will not stop the fixation of nitrogen from the air by bacteria in legume crops.

The rate of nitrogen fixation by bacteria will go down but will never stop completely no matter how high the level of soil nitrogen is.

Nitrogen fixation is greatest in those plants which make the largest total growth. The fixation process in slow growing legumes such as alfalfa or clover will be slowed up more by adding extra nitrogen than would be the case with soybeans which make more rapid growth.

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Recommend the **NEW** "Enclosed Gear" **B-8G TRACTOR**

This new 2½ hp gear driven tractor has a fully enclosed engine equipped with reverse and a 3-speed automotive transmission. The operator easily selects the best speed for the job to be done.

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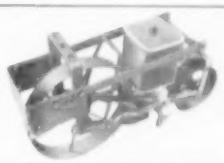
The Super Tuffy puts 1½ hp to work doing all types of outdoor chores—tilling, grading, cultivating, mowing, even snow plowing. Geared for utmost power and ease of operation.

Recommend the **NEW** Self-Propelled **SUPER PLANETILLER**

This tiller has a big 2¾ hp engine with two separate clutch controls . . . one engages the roller to make the tiller self-propelled, the other engages only the tines and operator controls depth and speed of work. Handles can be offset to either side.

Recommend Planet Jr. **SEEDING UNITS**

Finest for row crop planting and soil conservation. Easy to load and easy to service. Adaptable for use on most general purpose tractors. Assures uniform planting in multiple rows.



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Powered with a sturdy 2¼ hp engine, the Planetiller prepares seed beds, cultivates gardens, renovates lawns, mulches, cleans up borders. Fully adjustable with optional gauge wheels for deep or shallow cultivation. Rotary mower attachment available.

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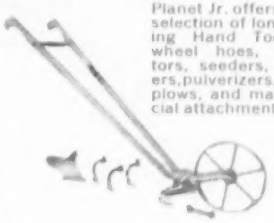

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WASHINGTON NEWS

Derthick New Commissioner

"A country school teacher" is how the new U.S. Commissioner of Education describes himself. He is Lawrence G. Derthick, former superintendent of schools at Chattanooga, Tennessee.

As the country's top educational official, Derthick is in charge of the U.S. Office of Education, including, of course, vo-ag work. Problems of agricultural education are expected to receive sympathetic attention from the new Commissioner.

Jay Richter

Derthick began his career in a rural area—as teacher and principal of the consolidated elementary and high schools of Greene county, Tennessee. He grew up in the mountain highlands of East Tennessee.

The U.S. education chief comes from a family of educators. In fact, he was born in a school dormitory at Hazel Green, Ky., where his parents had gone to operate a mission school of the Christian Church. Derthick, whose friends call him Larry, says of his politics that he is an "independent—a lone horse." Just turned 51 years of age, he is a six-footer who weighs in at 185 pounds.

As to his educational views, Commissioner Derthick thinks the basic art of teaching has changed little if any in the last 500 years. But "the old truths," he says, can be emphasized anew "by using the techniques of modern research to bring into wider play that which the good teacher always has done in helping children to learn and grow."

By Jay Richter
Agricultural Services
Washington, D.C.

Push Area School Bill

You can look for a lot of steam to be built up in Congress for passage during the new year of an area vocational school bill. It will be similar to the bill S. 4301, offered in the last session.

That legislation was not expected to pass, according to Executive Secretary M. D. Mobley, American Vocational Association, but was put before Congress and the nation "to perfect the measure" before being introduced again.

Idea behind the legislation is to operate schools on an area basis for training in agriculture, home economics, business, distribution, trades, and industry. Instruction would be "of less than college grade" for both young people and adults.

How about financing? The legislation offered in 1956 authorized appropriation of $5 million for the first year . . . $7½ million for the second . . . $10 million for the third. Thereafter, "any amount deemed necessary by Congress" could be appropriated.

This "open-ended", no-ceiling provision in S. 4301 is sure to meet considerable opposition if included in new legislation offered on Capitol Hill.

S. 4301 provided for 100 per cent matching by states of federal funds for the area schools after the third year of their operation. But no state funds would be required in the first year; in the second, the states would match 75 per cent of the federal ante.

Chances for passage of such a bill this year are thought to be pretty fair. Some lawmakers will argue that the schools are needed to catch up with Russia in technical and scientific training. "The shortage of technicians," says Lister Hill of Alabama, "is making more critical our present severe shortage of engineers and scientists. Many of these professional workers are now being drawn into positions for which they are more than adequately trained, because supporting technicians are not available."

Land-grant college leaders haven't been saying so out loud, but will probably put up stiff opposition to the area school training as outlined, at any rate, in S. 4301.

Records Reduce Taxes

Tax time is coming again, and Internal Revenue Service officials here are emphasizing the importance of keeping good records.

"The record-keepers available to farmers through their county agents," tax officials tell us, "are very useful in keeping good accounts in an uncomplicated manner."

The record books have been worked out by Extension and Land-Grant college folks, and

"Now here's what I mean by a farmer's tractor"

"Let me say right off, I've always been partial to Oliver. But the way I look at it, so's Oliver been partial to me. It just stands to reason. I'm their big business—*me*, the farmer. Why, right here where I'm standing, I can reach out and touch a dozen things that show where Oliver's got the farmer in mind. The power steering, for one. 'Hydra-lectric' controls. The rubber spring seat. Now there's even a power-shift to change the rear wheel spacing! And the Independently Controlled PTO—the others are *still* catching up with that one. So when you talk about a *farmer's* tractor, I just naturally think about Oliver—I know Oliver thinks about me. Oliver gives me the power to produce at the lowest possible cost."

Buy your new tractor
on the
"Pay as you Produce"
purchase plan
Ask your OLIVER Dealer

YOUR OLIVER DEALER REMEMBERS: "Oliver has *always* thought of the farmer first. The very first gasoline tractor was an Oliver. The first line of diesels—*Oliver*. Look to Oliver first—for the finest in farm machinery."

The Oliver Corporation, 400 W. Madison St., Chicago 6, Illinois.

OLIVER
"FINEST IN FARM MACHINERY"

. . . changes in soil bank payments will be made in coming year.

are designed to meet local conditions. Revenue officials warn, however, that "flat entries" in records are not in themselves enough to satisfy a tax agent. Care is advised in keeping collateral evidence, such as bills of sale, cancelled checks, etc.

Farmers should be getting tax forms soon, say the Washington tax people. There is an option as to when farmers may pay taxes on 1956 income, as was the case for 1955. They can either file a return and pay any tax by February 15, or file and pay the estimated amount of any tax by January 15. Anything due over and above a January 15 estimated tax payment will have to be paid by April 15.

Most Payments Taxable

Government tax men warn that farmers sometimes overlook certain types of income which are taxable, such as patronage dividends, refunds on gas taxes, and government payments. Most government payments are taxable, including soil bank

Farmers also frequently forget to take deductions to which they are entitled. These include such expense as that of most conservation practices; depreciation on assets such as machinery, farm buildings, and equipment; and the cost of meals served to custom crews and seasonal hands.

Dairymen and stockmen are advised to remember that they need not pay any tax on receipts from sale of breeding stock, providing (1) that sale of such stock was forced by drought or similar causes, (2) that replacement stock is purchased, and (3) that the replacements are made within one year after the tax year in which the sale was forced.

Farmers who voluntarily sell breeding stock must pay taxes on any profit therefrom, but may list such profit as capital gains. This cuts the amount of tax.

May Change Soil Bank

Pressure already is being turned on by lawmakers for changes in the 1957 soil bank operation. Some alterations in the program are almost certain to be made, although they may not be major ones.

Alterations being sought by lawmakers include (1) higher payment rates, particularly for tobacco which is in serious surplus trouble; (2) inclusion of feed grain acreage in the bank along with corn; (3) continuation of payments made in 1957 on planted acres struck by drought, flood, and other hazards.

One change in the bank that probably was to be made by Benson himself, although USDA hadn't announced it at press time, was to sweeten up payments for producers who have achieved high yields. Payments were made in 1956 on the basis of county yields. In the new year, barring a reversal in USDA thinking, payments probably will be on the basis of the individual farmer's yield record.

Benson already has officially announced that there will be an incentive offered for keeping identical acres in the bank a second year.

Payment rates for '57 have been announced by USDA, at the same levels as for 1956. But don't consider all of them firm. Congress may well make a change or two. Cropland eligible for the 1956 acreage reserve may be banked again in 1957, with the exception of peanuts and long-staple cotton. Demand for these commodities is relatively strong, and the Secretary sees no reason for including them in the program.—*End*

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3. row or band application
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9. spreads salt to remove snow
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IDEAS that WORK

County Maps for Visitors

No waste motion trying to locate any certain farm in Stanley county, North Carolina. All one needs to do is contact the county agent in Albemarle and his staff will give directions and mark it out on an easy-to-read map that shows main highways, country roads, and locations of all farms in the county.

The maps, donated by a local advertiser (car dealer), shows all roads, important checkpoints like brooks, schools, churches, and even shows RFD routes, and is mighty helpful to both the resident and the visitor.

Maps are given free to anyone trying to locate a certain farmer.

—Charles L. Stratton

Store Chemicals Properly

Here are tips from Harold Gunderson on storing left-over chemical insecticides.

First, store them where temperatures stay above freezing; second, keep off the floor and in a dry place; and third, be sure to keep out of reach of children.

Gunderson further states that if containers are rusty or corroded, empty them into a clean metal or glass container. But, be sure to transfer the original identifying label to the new container.

★

Appoint Foundation Manager

The National 4-H Club Foundation has appointed W. W. Eure as program director and manager of the National 4-H Club Center. He will begin work January 1, 1957.

Eure will be responsible for the development of educational programs at the National 4-H Club Center as well as operation of the physical plant. He has a broad background in extension and ag leader work.

★

Officers of the Mississippi Association of County Agricultural Agents, elected at the annual association meeting in Jackson, are, l-r: W. T. Smith, Booneville, first vice president; George Mullendore, Magnolia, president; T. E. Berry, Greenville, second vice president; and D. O. Scott, Columbia, secretary-treasurer.

Cauliflower: left, boron treated; right, brown curd with boron deficiency
Alfalfa yellows and rosetting due to boron deficiency
EXAMPLES OF BORON DEFICIENT CROPS
Apples with external cork cracks, necrotic areas and dwarfed
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Fascinated by the mink tie President Howey is holding are Jim Wall, daughter Connnie, Mrs. Wall, and Mrs. Howey. The tie was a gift from the Wisconsin Vo-Ag Teachers Association.

"The Bulldog on the Bank, and the Bullfrog in the Pool" was sung in barbershop fashion by four vo-ag teachers at the annual NVATA breakfast. Their names are being kept secret to prevent crowding their already busy schedule with requests for singing engagements.

In St. Louis

NVATA Convention

It reached an all time high!

(Pictures and story by Better Farming Methods)

● ENTHUSIASM WAS HIGH—interest was up — and everyone agreed that this was the best convention the National Vocational Agricultural Teachers Association ever held.

Over 200 ag teachers registered for the four-day event held at the Jefferson Hotel in St. Louis, Mo., December 1-5.

The membership report showed that 9,654 dues-paying vo-ag teachers now belong to the Association. This is the highest total ever recorded. And, the membership comes from practically every one of the 48 states.

In the business sessions, the delegates approved the request of the Executive Committee to recommend to all state associations that the official NVATA insignia be used in service awards, and that the Association urge state groups to include a statement on their letterheads of the fact they are affiliates of the NVATA.

They authorized the Executive Committee to develop a uniform retirement insignia or certificate for use by individual states.

On a split ballot, they gave the NVATA Executive Committee authorization to study and bring about, if necessary, changes in the state alignment of the regions so that each region might have a minimum of 1,000 dues paying members.

At the agricultural section meeting of the American Vocational Association, three leaders in the field gave brief resumes of their suggestions for planning the future program of vocational agriculture.

Bass Addresses Group

First to speak was *R. E. Bass, AVA vice president and state supervisor of vocational agriculture, Virginia.*

Bass pointed out that we might expect little increase in vo-ag school enrollment, but that young farmer and adult classes should increase in the years ahead. He mentioned the fact

Winners in the "Exchange of Ideas" contest were (l-r) Keith C. Merrill, Idaho; J. W. Taylor, Kansas; R. E. Hauptmann, Iowa; C. W. Barnett, Ohio; Robert Hargrave, Florida; and Joseph Scott, Maryland.

that young farmers need to get more educational services from vocational agriculture than they have received in the past.

He urged teachers and other leaders in agriculture to give more time to research studies and to use what research is available in helping plan vocational agriculture for the years ahead. He made the prediction that teachers will have to be better trained in vocational agriculture and skilled in the technical developments in the field. It may be that it will be necessary to lengthen the time of preparatory training before teaching.

He ventured the hope that the NVATA would get behind and encourage better conduct at the FFA National Convention. He placed part of the responsibility for bringing about such a change in the hands of ag teachers.

He said that supervisors and teacher-trainers more and more need to seek the advice of vo-ag teachers in planning vocational agriculture. He predicted that there would be greater cooperation, more joint planning, with less criticism and disagreement in the field as each group worked with the others to advance the profession of vocational education in agriculture.

We are Rose Bowl bound in this picture. On the left are stalwart supporters of Oregon State College, Don Kabler, newly elected vice-president, and Waldin Wedin, both from Oregon. On the opposite side, quarterbacked by R. E. Hauptmann, are the Iowa "linemen." From back to front: Jim Hamilton, Windol Wyatt, Norman Vandehaar, L. D. Simonson, and Joy Hayes.

Spanton Discusses FFA

The next speaker was *W. T. Spanton, chief, Agricultural Education Service, U.S. Office of Education.*

He pointed out that one of the needs was to recruit good young men for the teaching profession to take care of the annual turnover.

Spanton said that there was a need for revival of interest in the real vocational standards of agricultural education. Mentioning the FFA, he said it would need to continue to maintain its high standards of quality and contribute to the goals of democracy. If this could not be maintained, it would be in for a setback.

He dwelled at length on the situation at the recent FFA convention and the need for stricter supervision of boys who go to this annual event.

When you stand between Floyd Johnson, South Carolina and S. F. "Pete" Peterson, North Carolina, past-president of NVATA (right), you have to be a big fellow. It took a step to bring Mark Murray, Wisconsin, to chin level of these two men.

Spanton concluded with the challenge that in the race with Communism, we would need to help the profession progress, keep abreast, and meet the needs of a changing agriculture with a program that would serve the farm people.

Howey Reviews NVATA

Filling out this three-pronged attack on the future program of vo-ag, *Robert Howey, president, NVATA*, gave a brief resume of the tremendous strides the organization has made in recent years. He noted that the membership was at the highest point it has ever been, and that the Association is determined to reach 100 percent membership in the near future.

He told the assembled group that it is necessary for any program to have the participation of individuals at the grass roots level. He pointed out several ways in which the NVATA has been encouraging its individual

These men will guide the NVATA in 1957. Standing: Lionel Cross, California, secretary; Robert Bishopp, Wyoming, president; Paul Mechling, Ohio, Ed Fife, Massachusetts, James Wall, Nebraska, vice presidents; Neldon Taylor, California, treasurer. Seated: Robert Howey, Illinois, past-president; Luther Hardin, Arkansas, Don Kabler, Oregon, and Kenneth Henderson, Kansas, vice presidents.

The Wisconsin boys presented President Howey with a genuine mink bow tie. Adjusting it for him and making the presentation is Mark Murray, secretary of the Wisconsin association.

members to contribute to the overall profession of agricultural education. This was done by going through state affiliated organizations and thence to the national association.

Smith-Hughes Act Good

Howey thoughtfully discussed the present program and interpretation under the Smith-Hughes Act that brought vocational agriculture into being. He pointed out that this is a problem that affects all the divisions of the profession and would need the coordination of all groups.

"I firmly believe that vo-ag will make the greatest progress with wise, sensible, thoughtful, and bold interpretation of the present Smith-Hughes Act, taking into practical consideration the great technological revolution that is going on in agriculture today," said Howey.

He pointed out that much of our work has been done at the pre-vocational level, that the program ought to give emphasis to the young farmer and adult phase of vocational education. He also pointed out the need for getting local people into planning the program so that we might more nearly serve their specific needs in each individual community.

Count Adults Too

Where problems exist with some teachers in shrinking agriculture day classes, he pointed out that the total program should take into account all phases of vo-ag teaching. "Adult and young farmer education must be considered a part of the total program and not something separate and apart. We need to count total numbers of students in all phases of our program. We need to do this in order to justify our program with school administrators who are concerned with numbers of students per teacher."

He introduced a resolution recommending to state affiliated groups the formation of a committee that would help advise industrial companies on educational materials they would like to prepare for teacher use. He also introduced a resolution recommending that each affiliated state association help organize a committee, including all vo-ag groups, that would study and plan future programs.

Howey noted that one of the important areas of vo-ag work was at the actual teaching level. "The ultimate effectiveness of our program depends upon the amount of active participation he (the vo-ag teacher) has in formulating a program he can carry out to meet the needs of his community."

Meet in Summer in '57

Ag teachers attending the convention were urged to make plans now to attend the summer convention of the Association. This will be held in Philadelphia, Pa., August 3-9, 1957. The NVATA is anxious to have as large a turnout of vo-ag teachers as possible since this is the first summer convention of the AVA.

Newly elected officers of the Association include, Robert J. Bishopp, president, Powell, Wyo.; Ed Fife, vice president, Region 6, West Springfield, Mass.; and Don Kabler, vice president, Region 1, Corvallis, Ore. Holdover regional vice presidents include, Kenneth Henderson, Region 2; James Wall, Region 3; Paul Mechling, Region 4; and Luther Hardin, Region 5. The elected treasurer was Neldon Taylor, Redding, Calif.—*End*

FROM OLD MILL STREAM TO STREAMLINED MILLING, 16 mm., color, 20 minutes, 1956. Available from Daffin Manufacturing Company, Lancaster, Pa.

If you are interested in a film to show your farm folk illustrating the varied and successful use of mobile feed grinding and mixing equipment, try scheduling this film.

The film begins with a brief review of old vs. new feeding practices, and then takes the viewer into our modern world. It shows how mobile grinding and mixing equipment can grind feeds, blend them properly with concentrates, including molasses, and bag the feed directly on the farm. You see illustrations of grinding roughages and hay as well as farm grains. Illustrated are feed ingredient and molasses mixing-blending.

The film is not technical, and while it does not contain a great deal of feeding information, it does illustrate well the mobile grinder and its application to farming today.

DESIGN FOR BETTER BEEF, 16 mm., sound, color, 38 minutes, 1956. Available from the American Cyanamid Company, Animal Feed Department, 30 Rockefeller Plaza, New York 20, N. Y.

A full color, documentary motion picture report on modern cattle feeding techniques employed in the United States and Canada is now available to ag leaders.

The picture was produced and designed to help cattlemen reduce the estimated $164,000,000 annual loss from disease and other causes. The picture is narrated by Walter Cronkite, news commentator for the Columbia Broadcasting System.

The underlying theme of the film is that cattlemen can substantially reduce the staggering disease loss by employing up-to-date feeding methods which result in healthier, better quality cattle. To illustrate the benefits derived from these feeding techniques, narrator Cronkite interviews such well-known cattlemen as J. Smiley Triplett, Amarillo, Tex.; Ray Baxter, Grand Island, Nebr.; and William Jantz, Thermal, Calif. Other interviews are conducted with Dr. William M. Beeson, Professor of Animal Husbandry at Purdue University and Cyanamid technical authorities, Dr. Sterling Brackett and Dr. Max J. Harvey.

THE RIVAL WORLD, 16 mm., sound, color, 1956. Produced by Shell Chemical Company and available from Shell Oil Film Library, 100 Bush St., San Francisco, Calif.; P. O. Box 2099, Houston, Tex.; 624 S. Michigan Ave., Chicago, Ill.; or 50 West 50th St., New York, N. Y.

This movie describes the never-end-

ing struggle for survival between man and the disease-bearing, crop-destroying insects. These ravaging pests bring death to half of the men who die, and destroy one-third of all the food man grows. The film follows the world-wide attack on man's food.

A locust invasion of the Sudan and East Africa is shown together with a dramatic sequence taken from planes during the aerial spraying of flying locust swarms. There are also many startling close-ups of insects moving, feeding, destroying, and being destroyed. "The Rival World" tells how science is devising methods of fighting enemy insects. It points out that man can master this "rival" world only by marshaling his resources and encouraging scientists to improve and increase insect control methods.

MORE FROM EVERY ACRE, 16 mm., sound, color, 23 minutes, 1956. Produced by and available from Northrup, King & Company, 1500 N. E. Jackson St., Minneapolis, Minn.

This film tells a threefold story of good farming, good plant breeding and good seed processing and production as an answer to profitable production for the farmer and grower.

It was filmed on the 160-acre farm of Lester Dammann, a progressive Minnesota farmer.

It stresses the use of good seeds and their care and use in order to give the farmer maximum production from this source of his farm program.

Ag leaders will find it an interesting and informative film, one that will be enjoyed and remembered by farm folks.

INBRED LIVESTOCK SLIDES, 2 by 2 colored slides, available from the Inbred Livestock Registry Association, Institute of Agriculture, Room 8, Livestock Pavilion, St. Paul 1, Minn.

A total of 42 different slides on inbred livestock are available on a loan basis to ag leaders who might find use for them in their work. The only requirement is that they return the slides to the Association within three days of their use and pay the return postage.

Ag leaders who would like a source of material of this type may write to the Association and receive a list of the various slides available from which they can make a selection.—**End**

These are the newly elected officers of the New York Association of County Agricultural Agents. L-r: Dale Brown, Cooperstown, secretary-treasurer; Russell Cary, Wampsville, vice president; and Herbert Johnson, Rochester, president. Johnson succeeds William Palmer, right, Kingston.

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CONTINENTAL RED SEAL IRRIGATION POWER

Powerful as the Nation

CONTINENTAL MOTORS — AMERICA'S STANDBY

Continental Red Seal F244 engine driving Layne deep well pump irrigating cotton at Stoval, Miss. Installation by Layne-Central Co., Cleveland, Miss.

GASOLINE—IRRIGATION

Model	Cyl.	Bore	Stroke	Bare Engine H.P.
Y-112	4	3 5/16	3½	33.0 @ 2800 RPM
F162	4	3 7/16	4½	58.0 @ 2800 RPM
F226	6	3 5/16	4½	77.0 @ 2800 RPM
F244	6	3 7/16	4½	85.5 @ 2800 RPM
M330	6	4	4½	122.5 @ 2800 RPM
M363	6	4	4 11/16	129.0 @ 2800 RPM
B427	6	4 5/16	4⅜	150.0 @ 2800 RPM
H260	4	3⅞	5½	64.0 @ 2200 RPM
H277	4	4	5½	68.4 @ 2200 RPM
J382	4	4½	6	81.0 @ 1600 RPM
T427	6	4 5/16	4⅜	151.0 @ 2800 RPM
U501	6	4½	5¼	163.0 @ 2600 RPM
R602	6	4⅜	5½	195.0 @ 2600 RPM
S820	6	5⅜	5½	260.0 @ 2600 RPM

LPG—IRRIGATION

Model	Cyl.	Bore	Stroke	Bare Engine H.P.
F162	4	3 7/16	4½	58.4 @ 2800 RPM
F226	6	3 5/16	4½	82.0 @ 2800 RPM
F244	6	3 7/16	4½	88.5 @ 2800 RPM
M330	6	4	4½	123.0 @ 2800 RPM
M363	6	4	4 11/16	128.5 @ 2800 RPM
B427	6	4 5/16	4⅜	150.0 @ 2800 RPM
H260	4	3⅞	5½	63.0 @ 1800 RPM
H277	4	4	5½	72.5 @ 2200 RPM
J382	4	4½	6	84.0 @ 1600 RPM
K363	6	4	4 11/16	132.0 @ 2600 RPM
T427	6	4 5/16	4⅜	148.0 @ 2400 RPM
U501	6	4½	5¼	176.0 @ 2600 RPM
R602	6	4⅜	5½	210.0 @ 2400 RPM
S820	6	5⅜	5½	280.0 @ 2600 RPM

DIESEL—IRRIGATION

Model	Cyl.	Bore	Stroke	Bare Engine H.P.
ZD125	4	3¼	3½	36.0 @ 2400 RPM
GD157	4	3½	4½	40.5 @ 2400 RPM
ED201	4	3⅝	4½	47.5 @ 2400 RPM
HD260	4	3⅞	5½	60.5 @ 2200 RPM
HD277	4	4	5½	64.0 @ 2200 RPM
JD382	4	4½	6	73.0 @ 1600 RPM
TD427	6	4 5/16	5½	110.0 @ 2400 RPM
RD572	6	4¼	5½	163.0 @ 2400 RPM
SD802	6	5 5/16	5½	212.0 @ 2200 RPM

Numerals in model designations denote piston displacement in cubic inches.

Flooding or sprinkling is more, these days, than mere insurance against drought; it's the surest route to higher quality crops and larger yields. No matter *what* you raise, your need for regular watering gets greater every year, as more and more of the neighbors whose crops compete with yours turn to irrigation as a matter of routine . . . Your Continental dealer carries the world's most complete irrigation engine line—gasoline, Diesel, LPG, from 33 to 280 HP. Why not ask him for an expert survey of your irrigation needs? He'll show you how to reserve next season's rainfall in advance, with the help of dependable Continental Red Seal power.

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Review Defoliation Research

By Wesley Chaffin
Oklahoma A & M College

● THE DEVELOPMENT and successful introduction of defoliating and drying chemicals has been one of the most significant contributions toward complete mechanization of cotton production.

Chemical treatment of the cotton before harvest hastens the opening of mature bolls and makes possible an earlier harvesting of the crop. This frequently means better grades with a higher market value.

Removal of leaves and drying of bolls also increases the efficiency of mechanical harvesters, including both pickers and strippers.

Defoliation provides better visability for picker operators, reduces the need for frequent stops to clean the picker drum and spindles, and permits earlier harvesting on days when morning dew is abundant. Where stripper harvesters are used before frost, the practice is considered a necessity.

Defoliation of cotton has been most profitable in seasons when conditions were favorable for normal plant growth and high yields. Less favorable results have been obtained in dry seasons when plant growth is limited and in areas where the growth season is relatively short.

Two Types of Chemicals

Chemicals used for pre-harvest treatment of cotton are of two types—defoliants and desiccants. A true defoliant kills and removes the leaves but does not kill the stems of the plants. A desiccant kills both the small stems and leaves and has a drying effect upon the plant tissues but may remove only a portion of the leaves.

Defoliants are preferred where cotton plants are large in size, the growth season is relatively long, and the crop is set and matured over a considered period of time.

Desiccants are used mainly on the smaller storm-proof, determinate growth types where the grower plans to harvest the entire crop with a stripper in one operation. The application of a desiccant has also proved useful under mid-south conditions where an occasional heavy growth of grass and weeds must be killed and dried prior to mechanical harvesting of the cotton crop.

The rapid progress in cotton defoliation has been made possible primarily by a well coordinated program of research conducted jointly by the Agricultural Experiment Stations in the Cotton Belt states.

Self-propelled, high clearance ground machines with proper shielding for minimizing danger to cotton plants are now used in some areas. The single flooding type nozzle that looked promising in preliminary testing failed to give satisfactory coverage of rank cotton for complete defoliation in the Mississippi Delta area in 1955. For ground equipment, the U-shaped boom or boom that drops between the rows continues to give the most uniform coverage. A new airplane spray boom with nozzles arranged in a clustered design gave more uniform distribution of the spray solution in tests conducted at Stoneville, Miss. In some of the tests, however, airplane spray applications reached only the upper foliage of rank cotton and a second application was necessary to obtain satisfactory defoliation.

Discuss New Defoliants

Calcium cyanamid has given excellent results throughout the eastern half of the Cotton Belt and continues to be one of the most widely used chemicals for pre-harvest treatment of cotton in that area. The South Carolina Experiment Station reports that it gave excellent defoliation and caused more rapid leaf shedding than any other defoliant tested. Cyanamid gave good results on irrigated cotton in Alabama and in the coastal plains of that state, comparing favorably with the chlorate formulations. It has also given good defoliation in Texas and California but did not effectively inhibit new growth in some of the tests, particularly in Texas.

Since calcium cyanamid is applied in dust form, a dew, mist, or some other prolonged source of moisture is necessary for its activation.

The chlorates and chlorate-borates gave excellent results in the 1955 tests and their use has been extended into nearly all areas of the Cotton Belt. Several chlorate formulations gave similar and satisfactory results in South Carolina, Alabama, Mississippi, and Texas. The formulations tested included Shed-a-leaf, Defolate, Magron, and others.

The Shed-a-leaf formulation gave 60 to 70 percent defoliation in California. Magnesium chlorate and sodium chlorate-borate compounds gave the most consistent and highest defoliation in Texas. These formulations, in combination with Amino Triazole, gave excellent defoliation and re-growth control in southern Texas. Magron was the outstanding defoliant at Lubbock in west Texas.

Endothal, in combination with Amino Triazole, gave good results at several locations in Texas in 1955. It has also given very satisfactory defoliation in Oklahoma. While Endothal is used only to a limited extent in Texas and Oklahoma, it is still regarded as one of the best defoliants in low-rainfall areas where cotton is usually grown under conditions of very limited moisture.

These are the newly elected officers of the South Dakota County Agents Association. L-r: Laurel Howe, Brown county, secretary; Roland Fineran, Hughes county, vice president; Ray Eilers, Trip county, president; and Ray Mueller, Bon Homme county, sergeant at arms.

New Growth Is a Problem

Control of new growth for a period sufficient to permit harvesting of the cotton continues to be a difficult problem in cotton defoliation. Many of the defoliants which give good leaf removal are not effective in retarding new growth. The frequent occurrence of second-growth foliage between defoliant application and harvesting results in lowered quality of machine-picked cotton due to green stains on the fiber. These stains can not be removed by any of the bleaching processes currently used at the spinning mills.

For controlling re-growth Amino Triazole, a relatively new formulation, has shown great promise. Although this chemical acts both as a defoliant and a second-growth inhibitor, its best use in Mississippi, Texas, and Oklahoma has been in combination with other spray defoliants.

LEADING GROWERS OF MANY CROPS DEPEND ON TOXAPHENE FOR SEASON-LONG INSECT CONTROL. FOR EXAMPLE, TOXAPHENE IS OFFICIALLY RECOMMENDED FOR CONTROL OF MORE COTTON INSECTS THAN ANY OTHER INSECTICIDE.

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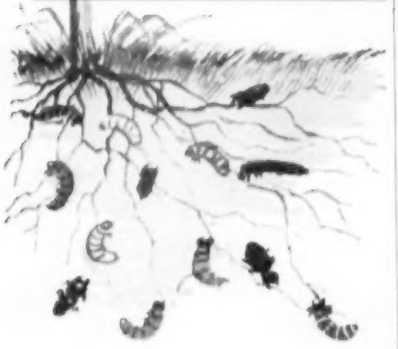
In sprays, dusts, fertilizer mixtures or in granular formulations . . . Heptachlor brings effective *soil insect* control to farmers of your area. Corn rootworms . . . wireworms . . . seed corn maggots . . . cutworms . . . white grubs and many others yield to the sure killing power of this outstanding, proven insecticide.

Safe, easy to apply . . . with no harmful residues or after effects when applied as directed . . . a single application provides effective control for a *full season.*

More and more farmers are turning to the truly *versatile* Heptachlor to kill the soil insects that kill their crops. In addition, Heptachlor also controls Forage insects, Soil insects, Cotton insects, Vegetable insects, Grasshoppers, Seed insects, Mosquitoes, and Citrus insects.

FREE—New Educational Booklet on Soil Insects

Pictures and describes 12 most destructive soil insects . . . how to detect them . . . what to do. Send for sample. Available for distribution as part of your farmer educational program at no charge!



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REPRESENTATIVES IN PRINCIPAL CITIES

In the Mississippi Delta one pound per acre of Amino Triazole in combination with one-half the recommended rate of other defoliants has resulted in good defoliation and satisfactory control of second growth for as much as 30 days. Similar results have been obtained at several locations in Texas, particularly in the south Texas and Brazos River Valley areas.

While Amino Triazole applied alone has given both good defoliation and second-growth control, it appears that the best use of this chemical is in combination with other spray defoliants to control second growth until harvesting of the cotton crop can be completed.

Desiccants Are Effective

The Pentachlorophenol formulations continue to be recognized as the most effective desiccants. These formulations, which include Golden Harvest, Permaguard, Stauffer Penta, and others, are used primarily for application on storm-proof and storm-resistant varieties after the plants are mature. They kill the leaves, bolls, and small stems of the plants, causing rapid drying of the plant tissues. Usually one application is sufficient. However, tests and observations made on the Black Lands in Texas indicate that in wet seasons two applications of Pentachlorophenol at the rate of 0.5 gallons per acre are more effective than a single application of 1.0 gallon per acre.

In favorable seasons when cotton yields are good and hand labor is available, many growers have followed the practice of handsnapping the lower portion of the crop as soon as the bolls are open in order to avoid waste and preserve the grade. The cotton is then treated with a desiccant, such as Pentachlorophenol, after which harvesting is completed with a stripper harvester.

Try Experimental Formulations

An experimental chemical designated as NP-1098 looked promising in the southeast in 1954. In 1955 it gave excellent results in South Carolina, although leaf shedding was slower than with cyanamid. NP-1098 also gave satisfactory defoliation in Mississippi.

At the USDA Delta Branch Station, SD-1369, AC-1022, DAD-E and DAC 79-E gave results similar to those obtained with NP-1098. VC-1-186 removed 88 to 93 percent of the leaves in six days. The California station reports that this formulation removed 80 to 93 percent of the leaves in tests conducted at Shafter. In the same test SD-1369 and AC-1022 also gave satisfactory leaf removal. B-1776 gave excellent results in southern Texas. The most rapid acting desiccant at Lubbock, Tex., was the new compound designated as TD6.

In this new "ice bank" type cooler, ice cold water flows freely down all sides and the bottom of the milk tank quickly cooling the milk to below 38 degrees. It is designed for protection against freezing, and full information is available from the Dairy Equipment Company, 1444 E. Washington Ave., Madison, Wis.

Study Bottom Defoliation

Research studies conducted by the Arizona Experiment Station indicate that bottom defoliation of rank cotton may have several advantages. Removal of the lower leaves aids drying and results in more uniform opening of mature bolls. This allows the grower to make the first picking earlier than would otherwise be possible. Bottom defoliation has, in many instances, effectively reduced boll rot thus resulting in substantial increases in yield.

Spray-type defoliants are applied after the lower bolls are mature in order to avoid damage to immature bolls. The spray pattern must be limited to the lower portion of the cotton plants.

The advantages of bottom defoliation have been more pronounced on tall cotton with a dense foliage toward the end of the growth season. The practice has been of little or no benefit on open cotton.

Time the Application

Cotton defoliation research continues to show that proper timing of the application of defoliants and desiccants is exceedingly important in determining how much benefit growers will receive from the use of harvest aid chemicals.

Applications to plants with immature bolls often result in reduced yields and impaired quality of both fiber and seed. Defoliation can be done most effectively after the bolls are mature and vegetative growth has

almost ceased, but with a high percentage of moisture still remaining in the stems and leaves.

Defoliation of early maturing, rapid fruiting varieties is usually delayed until at least 60 to 70 percent of the bolls are mature. For later maturing varieties which have a longer fruiting period, it is best to delay application of the defoliant until more of the bolls are mature.

Desiccants are usually not applied until at least 75 to 85 percent of the bolls are mature.

Check Weather Conditions

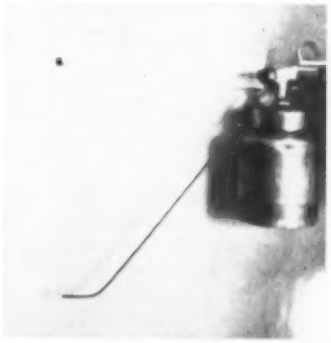
Weather should also be considered in timing the application of defoliants. It may have a marked effect upon the mechanics of application, the amount of defoliant required, and the rate of leaf fall. Fair, warm weather with little or no wind is essential for best results.

Experiments conducted during the past year indicate that, within a given type, there are no significant differences in varietal response to preharvest chemical treatments. However, the storm-proof varieties gave lower defoliation than the open-bolled varieties.

Some harvest aid chemicals give good results under varying conditions and over a wide area while others are more limited in their adaptation. Consequently, growers should obtain specific recommendations from authoritative sources in their respective states or areas.—*End*

IDEAS that WORK

Spray Gun Technique

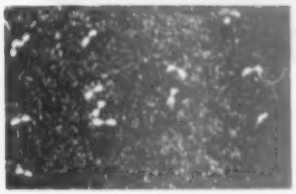


Students who are just beginning to learn to paint with a spray gun often have difficulty in keeping the spray gun the proper distance from the work. The device shown is a welding rod attached to the gun and bent so as to be out of the way of the paint. It will maintain the 8 to 10 inches needed for good spraying.—*James R. Griffitt, vo-ag teacher, Ivanhoe, Tex.*

WHAT YOU SHOULD KNOW ABOUT

PANOGEN

Liquid Seed Disinfectant



These North Dakota State College photos show Panogen treatment produced quicker emergence and better stands from same seeding rate. In this test, Panogen increased flax yields $9.10 per acre.

PANOGEN is a liquid seed disinfectant. Developed in Sweden in 1938, it became the first successful liquid fungicide to employ an organic mercury compound in true, stable solution.

It has proven remarkably effective in controlling seed and soil-borne fungus diseases of cereal grains, cotton, flax and certain other crops. Experiment stations also show that PANOGEN-treated seed germinates better, emerges sooner and produces higher yields. Today it is the *only* liquid seed disinfectant widely recommended by agricultural colleges.

PANOGEN'S success is largely due to its active ingredient, *Methylmercury Dicyandiamide,* an extremely potent member of the organic mercurial family. Being in liquid form, it applies readily and then releases vapors that penetrate deep under seed hulls to destroy disease organisms which products without "vapor action" can't reach. Fungicidal action is rapid . . . and because the mercury content is low, seed germination of properly treated seed is not adversely affected. Results are fast, effective and long lasting. PANOGEN-treated seed can be planted almost immediately or stored until the following season.

A sticking agent in liquid PANOGEN assures permanent application of the fungicide to the seed. A dye tints treated seed red to avoid accidentally using for feed. PANOGEN eliminates many of the principal disadvantages of previous treating methods . . . disagreeable dust, pre-mixing, freezing and fire hazards.

PANOGEN is used extensively and is recommended by leading agricultural authorities in such European countries as Sweden, France, Denmark, Norway, Switzerland, Germany etc., as well as in the United States and Canada.

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Carelessness and Chemicals Will Not Mix Safely!

By N. J. Wardle
Iowa State College

● FARMING IS NEW almost every day. No longer can a person learn how to farm and feel confident that he will be able to farm successfully for a lifetime. It is a full-time, continuing task.

New methods, new chemicals, new crops, new insects, new machines, new diseases—every day something new for the farmer. And with practically every job and on practically every day, the farmer uses a chemical—often a new one just developed. Most of these are pesticides. In one state there are 30 weed killers, over 50 insecticides, as well as two major rodenticides, and several fungicides, herbicides, and fumigants.

Reports from 2,100 farmers in one state showed they used during one year:

8—insecticide groups
5—fungicide groups
10—herbicide groups
8—rodenticides
7—fumigants

These 2,100 farmers reported over 200 different kinds of sickness or other reaction to these chemicals had occurred on their farms.

Pesticides are made to kill living organisms. While the safety factor with most is great, there is still great possibility of injury. Some are potent killers.

—1—

Read the Label

This is the No. 1 and most important rule in the use of pesticides, in fact, in the use of all chemicals.

When the label directs that workers are to wear goggles, it means to wear goggles whenever the chemical is handled, mixed, or applied. It does not mean just part of the time, such as, if you work with the pesticide for one-half hour. It does not mean to use goggles only if they do not bother you. It does not mean to use the goggles if they are handy. It means use goggles whenever working with that pesticide.

If the label directs that the workers should have the body completely covered, it means just that. A hand sticking out, a tear in the shirt sleeve or a cheek uncovered can result in severe irritation, sickness, or death. The possible price is too high for the chance taken.

Do What Label Says

Pesticides affect people in different ways. No one method of protection is effective or necessary for all pesticides.

a. Pesticides may affect the worker mechanically by being inhaled and coating the lungs, throat, and nasal cavity. It is hard for the body to remove such foreign substances. Dusts and wettable powders are usually strained out by the nose hairs. Emulsified concentrates, oil solutions, and aerosols are not strained out.
b. The solvents which carry some pesticides are themselves poisons. Continual exposure on the skin results in irritation or absorption into the body systems, particularly the liver.
c. The toxicity of the pesticides varies. The toxicity of DDT is p actically nil. In the last 10 years, over a billion pounds used with not a single authenticated case of human sickness or death. Others such as parathion are highly poisonous and deaths result every year.
d. The development of allergies due to complex organic compounds. Usually these will clear up if the worker wears a full face gas mask.

—2—

Keep in Original Container

This storage should be dry and separate. With the many chemicals used on the farm today, it is good economy and contributes to safety to have a separate building. There the chemicals can be kept in the original containers with labels intact. If kept dry, they will be just as good next year as this year. Any left-overs can then be kept until needed again. If the label is becoming defaced or illegible, replace with a new label with complete information.

Left-overs should never be buried or just thrown out. Either keep left-overs for future use or spray or spread them over the ground thinly. Be sure what the pesticide is and spray or scatter where safe. For instance, do not spray 2,4-D on grapes.

If it is necessary to dispose of pesticides, place in a sanitary land fill garbage disposal.

—3—

Keep Away From Children

If a separate chemical storage building is provided as suggested in rule two, this is easily accomplished. This building should *always* be kept locked. Only reliable adults should have access to it. In this building, first-aid equipment can be kept. It is well to have respirators, rubber gloves, full face gas mask, first-aid information, antidotes for chemicals being used, and adequate water supply.

—4—

Respect All Pesticides

Always remember that pesticides are for the purpose of killing living organisms. The safety factor with some is great, but never forget there is still a great possibility of injury from:

a. Physical contact as coating of lungs;
b. solvents and carriers that may be poisons;
c. all pesticides because of variable toxicity; and
d. allergies that may result from these complex organic compounds.

A few last reminders:

1. Avoid spillage. If accidentally spilled, remove as much as possible and cover with at least six inches of good black soil and spade or disk in.
2. Transfer pesticides from rusted or broken containers to new, sound and labeled metal or glass containers.
3. Don't leave equipment when filling. There is danger of backflow and well contamination.
4. Rinse equipment with light oil after use and before storage.
5. Burn empty bags. Do not inhale smoke.
6. *If label does not give clear, precise directions and precautions, do not buy product.—End*

★

Buy U. S. Savings Bonds

PURINA VISITS

Tom and Jack Acker

FARMERS OF TOMORROW

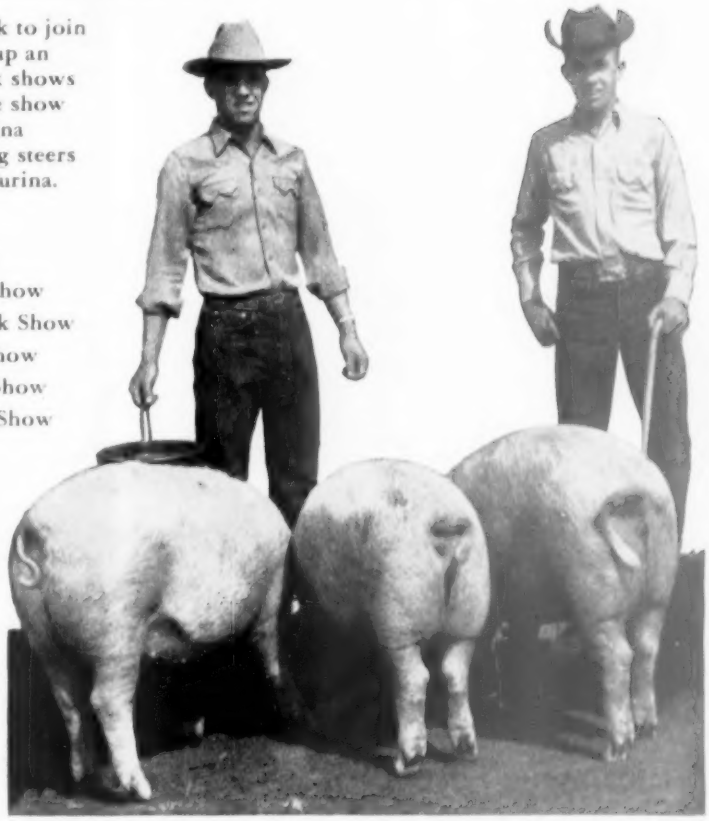
Tom and Jack Acker, who shelved farm work to join the Armed Services last spring, have racked up an impressive array of honors at Texas livestock shows and county fairs. These young veterans of the show ring—Tom is 17, Jack, 19—have won 9 Purina trophies, with their highest awards in feeding steers and barrows. Naturally the Acker boys fed Purina.

Among their major winnings were:

Grand Champion Barrow, Four County Fair
Grand Champion Barrow, Plainview Stock Show
Grand Champion Barrow, Amarillo Livestock Show
Grand Champion Gilt, Amarillo Livestock Show
Grand Champion Boar, Amarillo Livestock Show
Grand Champion Litter, Amarillo Livestock Show

Tom and Jack, who plan to return to the land after completion of military service, have long been active in farm youth work. So have their brothers and sisters before them. The Acker clan has a combined total of 46 years in organized farm youth activities. Tom and Jack have won Gold Star awards for outstanding achievements in their county, and Tom won top youth honors in Texas in 1954.

Besides their interest in farming, the Acker boys have played a lot of basketball, baseball and have participated in a variety of high school activities. To Tom and Jack Acker, congratulations and good wishes for the future from Purina!



The Acker brothers—Jack (left) and Tom—of Nazareth, Texas, with a few of their Chester White gilts.

Purina is constantly improving and developing new Chows . . . better feeds and feeding methods for farmers of today and the future.

The answer may come from Purina's research scientists next month, next year, or maybe not for several years. But it is this spirit of scientific research and development that has made Purina Chows the choice of feeders everywhere. And whatever type of livestock or poultry you are feeding, there is a specialized feeding plan, based on research tested and proved Purina formulas, that can help you get more from what you have! Ask your Purina Dealer—he's the man at the Store with the Checkerboard Sign—to tell you more about Purina Chows!

The Future of Farming Depends on Today's Youth!

RALSTON PURINA COMPANY

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Pesticides Are Improving

By Harold Gunderson
Iowa State College

● THE MILLER AMENDMENT to the Food, Drug and Cosmetics Act hasn't yet caused a noticeable cutback in the production of new insecticides. When the Miller Bill went into effect on July 22, 1954, there were dire rumblings of doom and disaster in the pesticide industry. As usual, we were afraid of the unknown.

Harold Gunderson

Now the provisions of this law are fast becoming established routine. W. B. Rankin, Food and Drug Administration, announced recently that more than 1,250 individual tolerances have been established. This means that:

1. There is an accurate analytical method that can be employed routinely to determine the insecticide residue on food crops.
2. There is evidence to show the amount of insecticide that remains on the crop at harvest when the insecticide is used according to directions.
3. Results of long-time feeding tests have shown any toxic effects of residues on laboratory animals. These results are used in setting the tolerances on the insecticide.
4. The tolerance established has a wide safety factor—about 100 times the dosage calculated to cause injury to humans.

This amendment provides for the setting of temporary tolerances on experimental insecticides. This reduces the cost of research with new pesticides, while still protecting the consuming public.

Read, Understand Directions

The most important advice any agricultural leader can give to pesticide users is—*read, understand, and follow the directions on the label!* This is important, because these directions are specific for the particular insecticide and its carrier.

And this brings up a question. How are you going to read and understand the label if the label has been destroyed? Pesticides of all kinds are being used widely, but are being stored on farms most carelessly. Agricultural leaders could perform a true public service by urging farmers to provide separate, dry storage where pesticides can be kept, where instruction books, antidote information, and safety equipment are quickly available, and where labels have a good chance of staying on the containers.

New Insecticides for 1957

Now let's look at some of the new insecticides you will be hearing about or using in 1957.

Many of the new materials are organic phosphates. We have several good phosphate insecticides—parathion, malathion, Diazinon, Dipterex—which have given good service.

Phosdrin is a product of the Shell Chemical Company. This phosphate has been granted an experimental tolerance of one part per million on apples, peaches, and many vegetables. It is effective as a systemic against a wide range of insects and mites and has a very short residual life. It is quite toxic to man, so must be used with every precaution. Toxic symptoms are like those caused by other phosphates.

Thimet is another phosphate which acts as a powerful systemic when applied on seed, soil, or foliage. It has been approved for use on cotton seed.

Dow ET-14 and its more highly refined relative Dow-58 have been announced. ET-58 is being tested as an internal control for cattle grubs. Although it looks promising it will be strictly experimental in 1957.

Other phosphates that appear to have an effect against both insects and mites include Stauffer Trithion, Hercules 528, Niagara 1240, Chemagro Guthion, and Bayer 19369.

New Chlorinated Hydrocarbons

A few chlorinated hydrocarbons have been introduced recently. Rohm and Haas Kelthane is one of these. Niagara Thiodan (5462) is a chlorinated heterocyclic sulfur compound which shows considerable promise against certain field crop, horticultural, and household insects. Mitox is also a chlorinated sulfur compound which appears to give excellent mite control. It is particularly good as an ovicide.

R-11, a McLaughlin Gormley King product, has been approved as an adjunct to pyrethrins-piperonyl butoxide fly sprays. Tabutrex, made by Consolidated Research and Testing Laboratories, repels flies from treated areas. Thus it may be possible to drive them to poisoned areas where they can be killed.

Uses for granular or granulated formulations of many insecticides are being developed. Many farmers found in 1956 that the ease and speed of granular application balanced the cost of the extra equipment. In 1957 there will be an increased use of granular insecticides.

So you see, the arsenal of pest control weapons is being constantly replenished. Now what are some of the pests against which we will use these and other chemicals?

Fruit Fly Menace

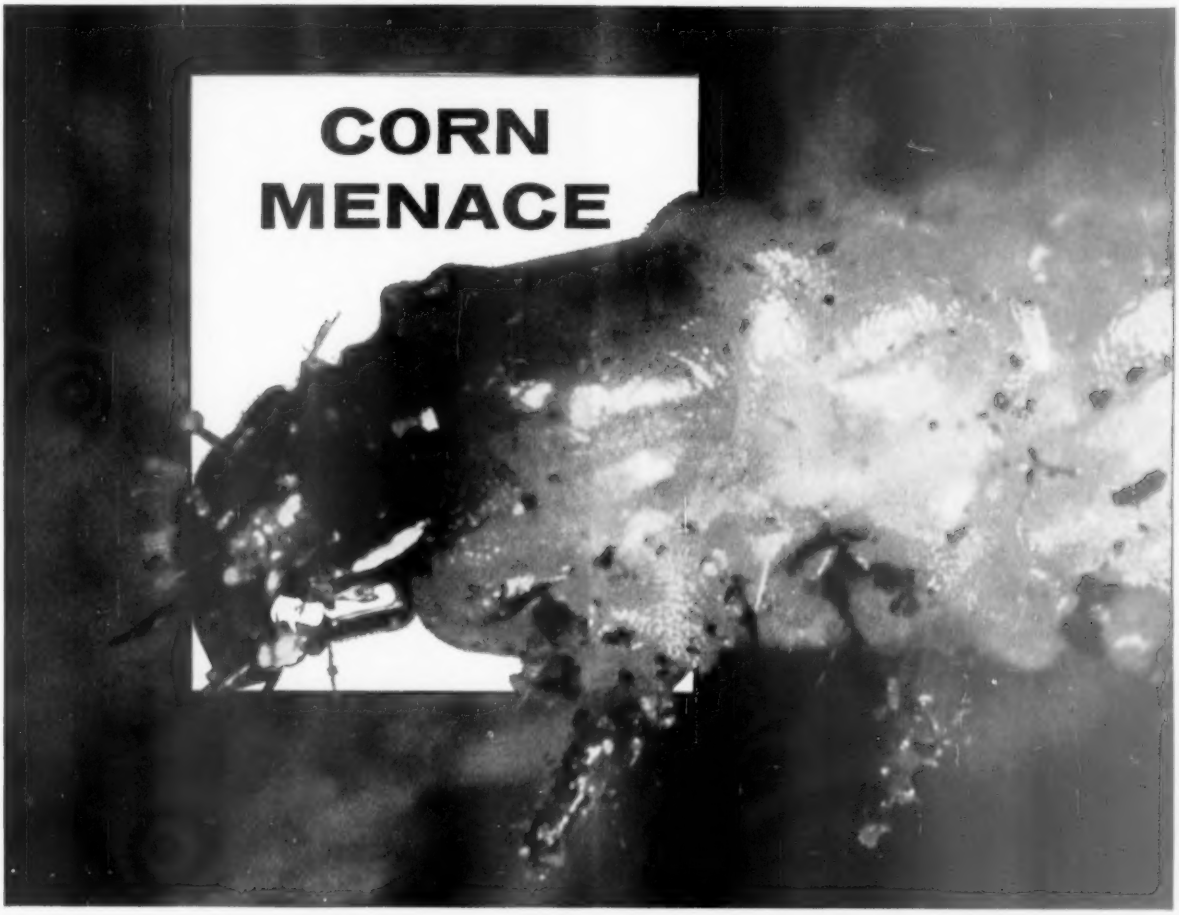
One of the most intensive battles is being waged against the Mediterranean fruit fly in Florida. This pest threatened the citrus industry of the country about 30 years ago. Prompt action cooperatively by the United States Department of Agriculture and the state of Florida eradicated the fruit fly at a cost of $7,500,000.

The present outbreak was discovered on April 13, 1956. Since then, infestations have been found in 27 Florida counties. The United States Department of Agriculture and the State of Florida are using a variety of modern methods of pest control—and they are paying off. Airplanes have sprayed 709,000 acres with malathion-sugar-yeast hydrolysate sprays. Ground equipment has saturated the worst areas. Bait traps—thousands of them—have been used to chart the progress of the control program. At the beginning of the work, the traps were catching 300 flies per 100 trap days. Six months after the work started, only one fly per 100 trap days was being recovered.

Control Is Important

This eradication program will cost money. Eradication is different from control. We might indicate this by saying that 80 percent control of a pest might cost 50 cents. To kill an additional 10 percent of the insects might cost another dollar. And to kill the final 10 percent might cost $59. Control costs 50 cents, *eradication* costs more than $60.

That is why most recommendations stress control rather than eradication. Over most of the country, insect pests move freely and eradication is actually impossible—there isn't that much money, time, equipment, or



aldrin gets soil pests

Every year the use of aldrin for soil pest control grows and grows. The reason: mere ounces per acre of this powerful insecticide effectively control rootworms, wireworms, white grubs and other harmful soil pests. Whenever soil pests attack—you can recommend aldrin with confidence!

Aldrin kills soil pests whether they touch, taste, or breathe it. Healthy root systems develop unmolested. Corn plants receive all the vital nutrients so necessary for vigorous growth. And healthy root systems prevent lodging for bigger and better profit-making yields.

Aldrin is easy to use. It can be broadcast as a spray or dust—or included in a fertilizer mix. Any way it is used, it gives effective, economical soil pest control.

To help achieve the most effective aldrin formulations, Shell provides the finest in technical service—and field representatives who work with growers, county agents and entomologists. For latest technical information, write to:

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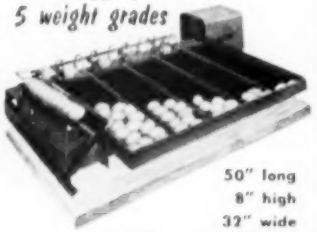

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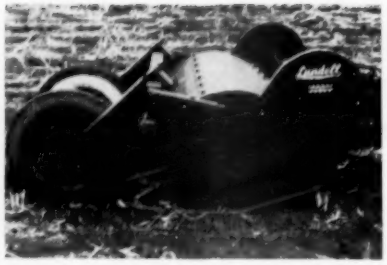

This newly designed wheel spacing attachment allows this Lundell Shredder to accommodate all types of row crops for shredding and soil building. Full information on the machine and its operation is available from Lundell Manufacturing Company, Cherokee, Ia.

chemicals available.

Other important fruit pests are the melon fly and the Mexican fruit fly, both of which were found in California in 1956. Again, cooperative efforts by the United States Department of Agriculture and the State of California are being bent to wipe out these pests before they cause serious damage.

Fight Khapra Beetle

The Khapra beetle is being contained in the West. There is hope that the infestations will be wiped out by the extensive program being conducted by the United States Department of Agriculture, the states, and warehousemen.

The spotted alfalfa aphid is causing a lot of worry, particularly in the southern half of the United States. This pest was found for the first time in Florida, Georgia, North and South Carolina, Tennessee, Virginia, South Dakota, Iowa, Illinois, and Minnesota in 1956. If it acts in these states as it has in those previously infested, profitable alfalfa growing is threatened. The spotted alfalfa aphid can be controlled but the cost is high.

Hoppers May Be Problem

Grasshopper plagues also threaten the Midwest in 1957. In spite of widespread and very effective control work by farmers and cooperating governmental agencies, dry weather made it possible for grasshoppers to lay maximum numbers of eggs in 1956. Spring weather will determine the actual extent of infestation.

Another large-scale cooperative insect control program is in forest insect control. The United States Department of Agriculture and several eastern states are working on a program to prevent the further spread of the gypsy moth. This shade tree pest has jumped the quarantine line at several points. Nearly 850,000 acres were treated by air and ground equipment in New York, Pennsylvania and

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Better Farming Methods
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Preferred by READERS

There is a dependable way to measure a publication's value: *Ask the readers.*

In 1954, through an independent survey, 1,719 vo-ag teachers, county agents, and soil conservationists were asked: Which of the three principal leader publications they found most helpful. Three out of four, receiving all three magazines and ranking one most helpful, *voted BFM first.*

Two additional (independent) surveys made since that time show the same preference.

• Preferred by MANUFACTURERS

There is another way to measure any publication's value: *Ask the manufacturers who advertise their products in it.*

Again in 1955, Better Farming Methods led the second publication in advertising revenue by 59 percent and the third publication by 123 percent.

Manufacturers invested $184,741 in advertisements they placed in Better Farming Methods during 1955.

Professional Magazine
for Leaders
who TRAIN and ADVISE
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New Jersey in 1956. An area two to four times as large will be treated in 1957. Nearly 100,000 acres were treated in Michigan where an isolated infestation was found in 1955.

Insect Resistance Disturbing

Resistance to pesticide chemicals among insects and mites is very disturbing. Houseflies resistant to organic phosphate insecticides are now reported in Denmark. Pyrethrins-resistant German roaches were found at an Army camp in the United States in 1956. Evidently we only multiply our troubles when we fail to use recommended dosages against pests. The general opinion seems to be that resistance develops in a population when that population is exposed to sublethal dosages. By using proper dosages at the proper time intervals a toxic level of pesticide can be maintained. Thorough and complete application is an important part of our efforts to limit the further development of resistance in arthropod pests.

We can be sure of the usual number of insect pest problems in 1957, complicated by a few unexpected outbreaks. We have effective chemicals available in quantity. Our job as agricultural leaders and advisors is to encourage their proper use.—*End*

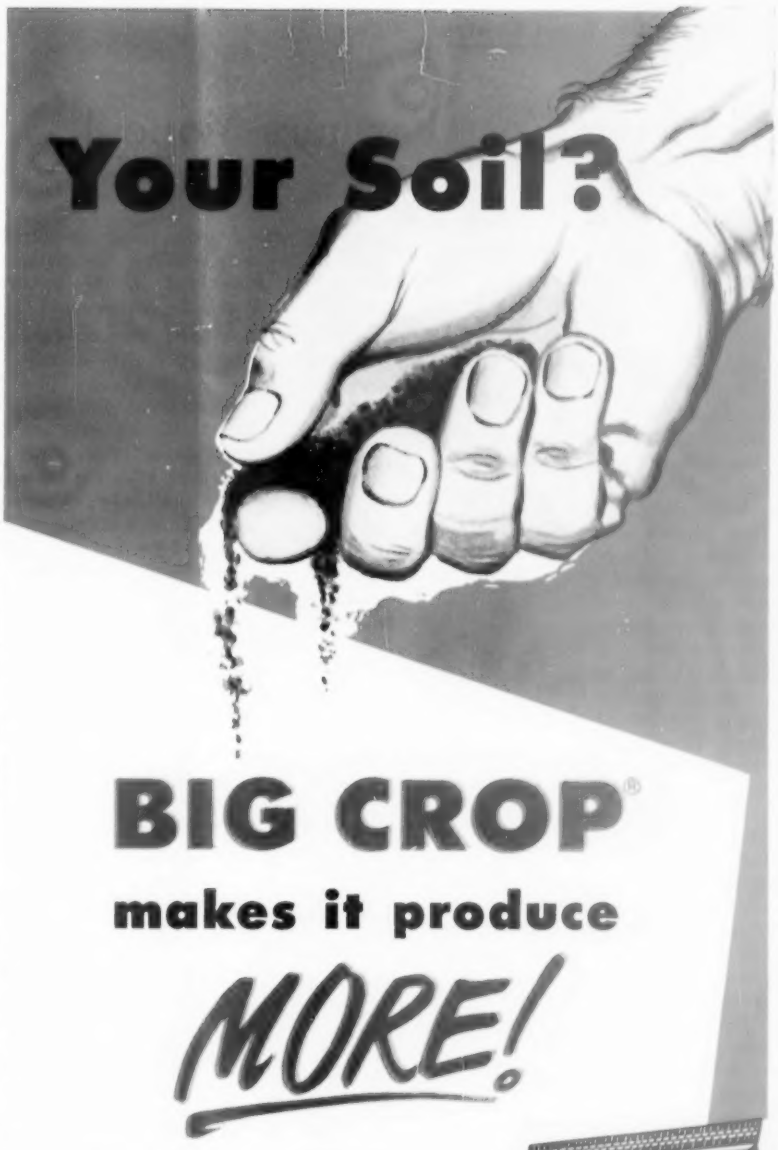
★

Study Pellets for Chickens

Both the rate of gain and efficiency of feed utilization were increased when feed for chickens was pelleted and animal fat added. This is the result of experiments at the University of Arkansas.

They also report that these two factors in combination result in an increase even more than the total of each one by itself. The cumulative increase was especially noticeable in feed conversion of chicks fed pelleted feeds containing additional fat.

"Talk about your home freezers! I've been married to one for years!"



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Weeds Cost Farmers Money!

By W. G. Westmoreland
North Carolina State College

● NEW INFORMATION on the costliness of weeds continues to accumulate.

Additional information came during early summer through the USDA Agricultural Research Service and Iowa State College. This report shows that grassy and broadleaved weeds in the row reduced soybean yields in proportion to the amount of weed growth. They contributed to lodging of soybeans without having a great effect on height or maturity date of the crop.

W. G. Westmoreland

The work was done with foxtail, velvet leaf, and Pennsylvania smartweed actually planted in the row with soybeans. Although six foxtail plants per foot of row caused only a 2.6 percent yield reduction, 12 foxtail plants per foot of row caused an 11 percent yield reduction. If velvet leaf or Pennsylvania smartweed were grown in the row at three plants per foot of soybean row, an average yield reduction of 8 percent resulted.

Actually, the conditions of weeds and soybeans were not too far different from those in some soybean fields being weeded through commonly accepted cultivation procedures. A significant fact in the entire test was that foxtail, a grassy weed, became established early and competed with the crop the entire season, while smartweed started later and caused the yield reduction late in the season.

What can be done about the situation? Generally, the only answer is a better job with those tools and available methods already in use. Chemicals can also be used on other crops in the rotation to reduce weed problems in soybeans.

"Simazin" for Corn

A new material, called "Simazin," has weed control workers enthusiastic. The material, a product of Geigy Chemical Company, has been widely used during the 1956 summer growing season with some amazing results. Its weed-killing properties were first discovered in the company's laboratories in Switzerland.

"Simazin" has been used at rates up to eight pounds per acre on corn and produced outstanding pre-emergence weed control for eight weeks with practically no corn injury. In some locations lower rates have produced just as effective weed control. And in a few cases, where cultivation was held to a minimum, weed control was very good at harvest time for a pre-emergence application.

Toxicity of "Simazin" to humans and animals is believed to be very low. The material is available only to research workers. Many important questions, such as crop and soil residues, are yet to be determined.

TCBA Shows Promise

In some areas of the country TCBA has shown promise for the control of some 2,4-D tolerant broadleaved weeds in corn. In other research reports the material appears no better than 2,4-D. In a few cases it has caused stunted corn which is twisted and brittle. Pennsylvania smartweed (*Polygonum pennsylvanicum*) is one 2,4-D tolerant plant that seems susceptible to treatment with TCBA. It is possible that some TCBA will be offered for sale this year. It should be used only on a trial basis until its place in the production picture is proven.

There has been much talk about the possibilities of new herbicides in which the acetic acid portion of 2,4-D and similar materials has been replaced with butyric acid. Certain changes in the configuration of these materials have possibilities of producing differences in crop tolerance and weed control not shown before. At the present, although the program is in its infancy, it appears that certain of these new materials may even control some broadleaved weeds in legume crops. These materials are still in the hands of research workers only.

Dalapon Checks Grass

Field applications of dalapon on Johnson grass, Bermuda grass, quackgrass, and cattail have produced excellent control. Results were best when applications were made before plants flowered, especially when lower rates were used.

AT (amino triazole) has given outstanding control of poison oak and poison ivy. It also looks promising on cattail. There is little danger to adjacent plants since the spray material must strike plant leaves to cause damage. Spray will drift and many plants will be stunted and "whitened" from it.

What About Proven "Tools"?

New weed control "tools" in the form of cultivating devices, chemicals, etc., are being developed each year. And interest is high in these new developments, making them "easier to sell."

At the same time, the use of modern herbicides is new in its entirety. Actually the very people who should be using some of the proven practices, like 2,4-D to control broadleaved weeds in corn and small grain, are the so-called "late adopters." The advantages of these "tools" to such people are tremendous and your program aimed at this group should be stepped up.

A "not-so-new" treatment is the use of 2,4-D, 2,4,5-T, and combinations of these two materials for controlling woody growth. Of particular interest is the "cut-surface" application. Water-soluble amine salts of 2,4-D are proving especially effective on a limited number of generally undesirable woody species. In many cases the chemical is applied directly from the can to a frill. Other materials and formulations are being tried in the same type treatment.

Look over your program of the past five years and evaluate its results. Pick out those new "tools" that have proven effective and be sure your list of prospects for 1957 includes work with some "late-adopters." Start where the people are.

Follow Label Directions!

Much concern has been expressed by growers over the possible problems associated with pesticide tolerances established under the Miller Amendment of the Pure Food & Drug Act. From the standpoint of the user of pesticides in the field, the best advice is to use the chemical according to directions on the label. Rates and mixes involved in these directions are those upon which analysis work has been based.

Follow label directions and only label directions. Do not use a pesticide for a job not shown on the label.—*End*

★

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NiCarb and *only* NiCarb can cut your mortality from both cecal and intestinal coccidiosis to ZERO. Your costs go down—profits up—with NiCarb in your starting mashes and grower feeds for sure coxy protection.

Thus, you can wind up at housing time with more of the chicks you started. Furthermore, these pullets will be better quality producers and you'll have saved on such items as growing facilities, feed, medication, and labor.

If birds are adequately exposed to all dangerous species of coccidia, a solid immunity develops by housing time. Commercial use with many millions of birds proves that NiCarb may be fed until just before pullets start laying, without adverse effect on subsequent egg production, hatchability, or fertility.

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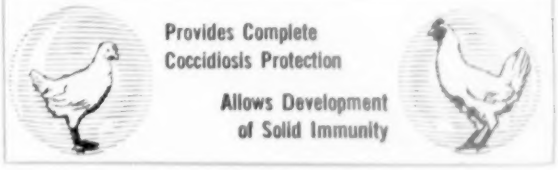

What's New in Rat and Mouse Control

Cleaner Grain–Yet More Loss!

By E. H. Fisher
University of Wisconsin

● REMEMBER A YEAR AGO when we told you about lowered Federal Food and Drug tolerance for rodent filth in food grain? Well, it became effective July 1, 1956, and the results are interesting. We're now getting cleaner food from grain, but there are even greater grain production losses due to more seizures of rat and mouse-contaminated grain. How can these apparently unrelated results occur?

Higher Food Standards

A close look at a federal report on grain seizures tells the story. From July 1, 1956 to September 30, 1956, 11 cars of rat and mouse-contaminated grain were seized during inspection of 718 cars. During the same period of 1955, only two cars were seized as a result of inspecting 264 cars. If the old, high tolerance had been in effect in 1956, only two cars would have been seized, even though two and one-half times as many cars were inspected. This is cause for optimism that educational efforts have helped to lower the *level* of rodent contamination since last year—this means cleaner food grain.

On the other hand, the *percentage* of seizures (based on equal numbers of inspections) more than doubled in 1956. Of course this was due to the raised standard for cleaner food grain. It is now causing at least twice as much loss for those along the line from the farmer-producer to the food processor. Yes, twice as much loss on a basis of the same number of cars inspected as in 1955. But the record shows more than two and one-half times as many inspections in 1956, so the actual loss is about five and one-half times as great as last year. This calls for greatly increased educational efforts.

Youth Group Programs

The gradually increasing activity of organized youth groups like FFA, NFA, and 4-H has helped to lower the level of rat and mouse contamination of food grain. Their rat and mouse control programs have incited community or large area action which is desirable. Business groups concerned with preventing food grain losses due to rodent filth are lending increased support to these youth programs where they learn by doing, and are also of public service. Of course rat and mouse control is of general economic importance too.

There are apt to be some changes in these youth programs, based upon both legal and ethical points. Where the group mixes and sells bait, there may be State labeling requirements and product liability complications. Recently agricultural extension personnel were reminded by their Federal Administrator to set up programs so that County Agents would not serve as vendors of rat and mouse control products where costs are involved. Efforts to have local dealers handle rodenticides is the best approach.

Anticoagulant Baits

Since the first commercial availability of an anticoagulant bait—warfarin—in 1950, there has been no improvement over this type material for efficiency and safety on the farm or in the home. Anticoagulants pival and fumarin have since become available also.

Where directions are followed, baiting will get results. Remember to:

1. Survey the entire premises and place baits so rats and mice cannot avoid them. Place baits closer together for mice than rats.
2. Keep bait available for these pests continuously.
3. Protected bait boxes keep a supply for the pests, and away from domestic animals.
4. Use the water-soluble form of the rodenticide at the side of the cereal-type bait. If it contains 5 per cent sugar, so much the better.
5. For hard-to-get infestations, add enough granulated sugar and corn oil to the cereal bait so that it contains five percent of each attractant.

Cleaner Grain and Less Loss

One hurdle has been cleared—the record shows less rodent contamination in food grain, but that can be improved.

The next hurdle is to lessen the financial losses which actually increased since July 1, 1956, due to higher standards.

Do your part in an established rat and mouse control program, or help get one started.—*End*

C. Dutch Holm, the first 4-H club boy in Harris county, Texas, spoke at the annual NACAA banquet held at the recent national convention in Houston. With him is Horace Abbott, veteran county agent and past president of the national association, Indianapolis, Ind.

★

Kaiser Expands Service To Help Ag Leaders

Kaiser Aluminum & Chemical Sales, Inc., has expanded its Agricultural Research Service organization to provide more complete service to farmers, farm building supply jobbers and dealers, and to agricultural schools, county agents, vo-ag teachers, and others in agricultural fields.

The organization provides extensive service on engineering, application, and performance problems, as well as coordinating new product development for the farm market. It also publishes and distributes a complete set of farm building plans with new plans being added almost every month.

The organization, which is located at the company's general sales offices, 919 N. Michigan Ave., Chicago 11, Ill., also provides educational and research services for government experiment stations, schools, and agricultural leaders.

★

Pellets Expensive for Turkeys

A three-year study by the University of Minnesota comparing pellets and ordinary mash for turkeys indicates that pelleted feed doesn't pay.

Turkeys make better gains, but the added cost of pelleting more than offsets the production gain.

Now It's Easy To Have Clean Plant Beds

with

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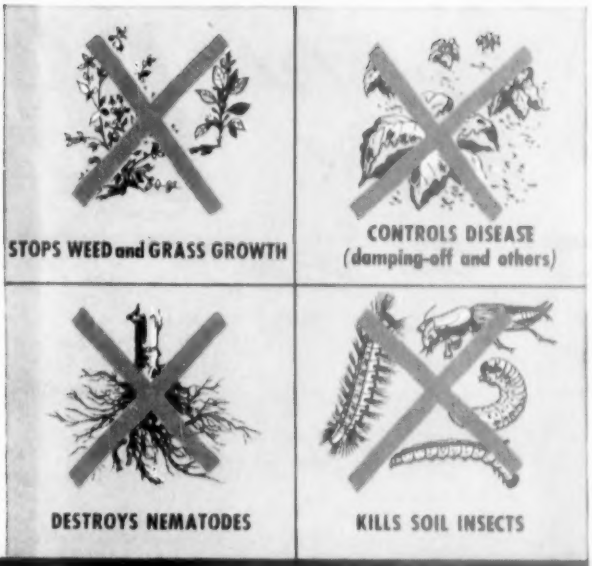

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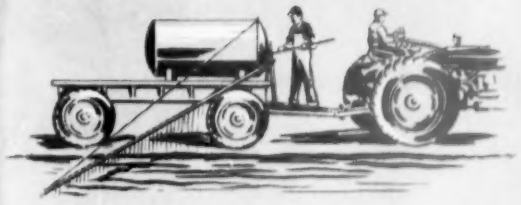
Want to eliminate hand weeding? Want to improve your rate of seeding emergence? Want to raise healthy young plants that thrive in fumigated soil; plants that are free from disease, nematode or insect attack? Want to treat all your seed beds at one time? Then you want Bedrench.

Bedrench is an exclusive Niagara formula. **Use it with profit for tomatoes, peppers, egg plant, cauliflower, cabbage, broccoli, celery, strawberries and other crops started in seed beds. Bedrench also gives flower and nursery seedlings a quick, healthy start.** You just mix it with water and drench into your prepared soil.

Bedrench is easy to apply (see diagrams). You can do it any time—up to within 10 to 12 days before planting. See your Niagara dealer or write for literature.

HERE'S HOW EASY YOU CAN DO IT!



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SMALL BED APPLICATION

NONE OF THIS!

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WHEN YOU BUY *Magara* YOU BUY PROTECTION

fmc *Trade Mark

Helpful BOOKLETS

126—Cold Galvanizing

A new cold galvanizing compound, Drygalv, is described in this little brochure from the American Solder & Flux Company. You may find it of use to you in your work with farm shop boys and adult farmers.

On the postal card
CIRCLE 126

127—Calf Feeding Manual

Here is the new 1957 edition, published by Blatchford Calf Meal Company, of their manual and guide to raising calves. It is available without charge to ag leaders for instructional work. It is edited by a college professor and contains much valuable information and practical experience in calf production. Illustrated with photos and drawings, charts and graphs, it will prove a valuable reference.

On the postal card
CIRCLE 127

128—Professional Chain Saw

This is the "Big Six," a new chain saw designed for the professional woodcutter by the Lancaster Pump and Manufacturing Company. It is powered by a custom-built six horsepower engine, and has many outstanding features and advantages. Would you like more information about it?

On the postal card
CIRCLE 128

130—Electric Tool Catalog

A 32-page 1957 catalog describes 69 portable electric tools and kits with over 400 accessories for do-it-yourself homecraftsmen and hobbyists. This free book includes over 150 pictures of tools and their uses with complete specifications and prices. It is available from Porter-Cable Machine Company.

On the postal card
CIRCLE 130

129—Water Is Wealth

Water is vital to good crop and livestock production. In order to understand more about profitable irrigation, how it can be adapted to your farm, and other information about this practice, R. M. Wade and Company has prepared an instructive brochure for you. It contains a graph form on which farmers can sketch their farm to get specific and individual help on laying out irrigation systems. Certainly you will want to study this brochure and have it on hand for use by your farmers.

On the postal card
CIRCLE 129

131—All-Steel Handy House

Here is a way to solve home storage facilities. Grand Sheet Metal Products Company has designed and now manufactures a new, all-steel utility "Handy House." It has many uses, your people may be interested in it, so be sure to send for information about it. Circle the appropriate number today.

On the postal card
CIRCLE 131

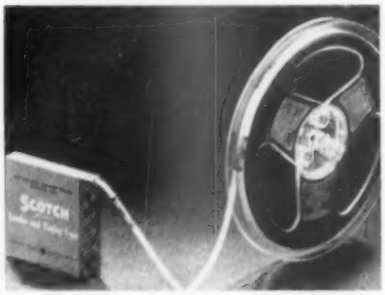
133—Caterpillar Booklets

Two new booklets are available to ag leaders from the Caterpillar Tractor Company. Each of them is done in attractive colors with many photos and good descriptive information. They are available from the Caterpillar Tractor Company to ag leaders for the asking.

A—Soil and Water Conservation
B—Land Forming for Better Water Management

On the postal card
CIRCLE 133A, 133B

132—A Strong Leader Tape



Pictured here is a new plastic leader and timing tape for use with magnetic tape recordings. It is a product of Minnesota Mining and Manufacturing Company, has a special anti-static coating, and a 50 per cent increase in strength. Certainly this will be of interest to ag leaders with such recording equipment. Send for your information on the postal card now.

On the postal card
CIRCLE 132

134—Shur-Rane Booklets

Here are several very excellent pocket-size booklets that will be of help to you in learning more about irrigation and its profitable use in agriculture. These booklets are prepared for ag leaders by the Shur-Rane Division of Food Machinery and Chemical Corporation. By all means, include a request for them on the card you are mailing today.

A—What You Should Know About Fall Irrigation
B—What You Should Know About Portable Sprinkler Irrigation
C—Larger Harvests Every Year
D—Engineered "Rainfall" Increases Yields

On the postal card
CIRCLE 134A, 134B, 134C, 134D

136—Insect Handbook

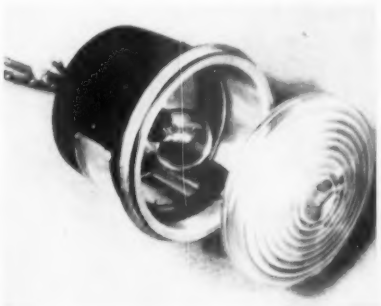
"Handbook of the Insect World" is one of the most elaborate and informative booklets ever made available to ag leaders. It contains 532 illustrations in its 64 pages covering most of the common insects. In addition to such illustrations, brief descriptions, classifications, and approximate size of each insect is given. It is available to ag

Use the handy postal card to request booklets.

leaders from the Hercules Powder Company and requests may be made by circling the appropriate number. Don't miss this valuable library reference.

On the postal card
CIRCLE 136

135—New Stop and Tail Light



Here is a high visibility stop and tail light suitable for all types of farm vehicles, completely water and dust proof. It is a product of the R. E. Dietz Company, and ag leaders can receive further information about it by circling the appropriate number.

On the postal card
CIRCLE 135

137—Nematode Wall Chart

If you are interested in soil fumigation, and the control of nematodes, here is an attractive three-color poster available from the Shell Chemical Corporation that will be of interest to you. You will find it a valuable reference piece, and it lists more than 50 species of nematodes in four main categories. Copies are available to ag leaders.

On the postal card
CIRCLE 137

138—Mayrath Charts

From the Mayrath Company, ag leaders can obtain charts that will be of interest for office and classroom use. They deal with common mechanical units used on the farm. Copies await you for the asking.

A—Correct Size Pulleys for Grain Augers
B—Correct Speeds for Corn and Hay Elevators

On the postal card
CIRCLE 138A, 138B

139—Livestock Pest Book

That's the name of California Spray-Chemical Corporation's book on livestock pests. You'll find here an excellent guide and much information about their control and the correct use of controlling insecticides. Copies are available to ag leaders, and the postal card is included for your handy use.

On the postal card
CIRCLE 139

All Booklets Listed in this section are

FREE!

These booklets are available from these individual companies and will be of help to you in your work of training and advising farm people.

140—New Wheel-Type Disk

This 16-foot wheel type disk has more than a ton and a half working weight, unusual cutting ability and covers a wide swath. It is a product of the J. I. Case Company, and more information is available to ag leaders. Include your request now.

On the postal card
CIRCLE 140

141—Six-Bottom Plow

Your farmers with large acreages and tough plowing conditions will be interested in this new, rugged, six-bottom truss-frame plow. It is the largest one being manufactured by the John Deere Manufacturing Company, and they would be delighted to send you additional information.

On the postal card
CIRCLE 141

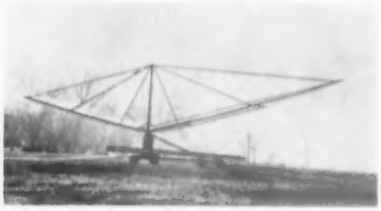
Sign your name—give your address—on the postal card.
Use a card from the latest issue of Better Farming Methods.

142—A Good Weed Killer

Amino Triazole is an excellent weed killer, and a pamphlet describing its use in weed control is available from the American Cyanamid Company. Now is the time to brush up on the latest chemicals for weed control, and this booklet will be of interest and help to you.

On the postal card
CIRCLE 142

143—New Irrigation System



Pictured here is a revolutionary new system of irrigation, a giant sprinkler. It rotates on a four wheel trailer, water pressure makes it go around, and it requires neither hydraulic pump nor electricity. It will distribute water evenly over a 500-foot circle. More information is available to ag leaders from Vermeer Manufacturing Company. Circle the appropriate number on the card you are sending us.

On the postal card
CIRCLE 143

144—Wirthmore Hog Book

Available from Wirthmore Feeds is a 40-page booklet covering all phases of hog raising. It has many illustrations, well written, and will be of teaching value.

On the postal card
CIRCLE 144

145—Grain Marketing Digest

Facts! Charts! Money-making Tips! That is what you will find in this brightly illustrated brochure on grain marketing. It is made available through the Clayton & Lambert company, ask for a copy on the postcard.

On the postal card
CIRCLE 145

146—The Milk Harvest

From Babson Bros. Co. comes a very informative booklet called "Harvesting Your Milk Crop." It tells farmers what they need to know about the formation of milk. Written by a college dairyman, you'll find it very helpful and full of information.

On the postal card
CIRCLE 146

147—Webcor Recorders

Tape recording has come of age, and is used by many in the ag leader field. For more information on a new line made by Webcor, Inc., circle the appropriate number on the postal card.

On the postal card
CIRCLE 147

Antibiotics Fight Plant Diseases!

By Carl E. Seliskar
Colorado A & M College

● THE RECENT DEVELOPMENT of antibiotics for agricultural use has given rise to an entirely new aspect of plant disease control.

Carl E. Seliskar

Here at last are materials that, absorbed by plant tissues, often become systemic, and thereby confer resistance directly or indirectly to disease in all parts of the plant. While the antibiotic with a perfect score in systemic action combined with high fungicidal value is yet to be developed, science is rapidly closing the gap.

The story of streptomycin is well known as an outstanding material in the control of certain plant diseases. Other new and lesser known antibiotics, however, promise to open even greater horizons in plant disease control.

Tests Control Stem Rust

Perhaps the most remarkable results reported in 1956 were those of a test conducted to evaluate antibiotics and other potential systemic materials for the control of stem rust of wheat. Plant pathologists at the University of Wyoming found that a single application of a new semicarbazone derivative of cycloheximide (Actidione) induced almost total resistance to stem rust in a large field experiment.

In the non-treated plots infection ran as high as 40 percent. Furthermore, there was no indication of phytotoxicity in the sprayed plots. The most remarkable facet of this experiment, however, is the fact that this resistance persisted for no less than 40 days! Residual value might have lasted even longer had not the occurrence of frost prevented further extension of the experiment.

Seed Resistance Is Possible

The possibility of resistance being induced in plants grown from seed harvested from the treated plots will be determined through inoculation studies in the greenhouse. In addition, experiments are now under way to determine if the resistance observed in the treatments was due alone to systemic action of the antibiotic or whether metabolic changes were induced in the plant.

Candicidin, an antibiotic reported last year as having promise in the control of stem rust of wheat, again has received attention in this and other disease problems. University of California researchers report that Candicidin A at 1:5000 provided complete control of wheat rust if applied immediately before inoculation, and 85 percent control if applied seven days before inoculation.

In other trials the same material at this concentration gave perfect control of bean rust and good control of white pine blister rust (uredial stage), if applied not too far ahead of inoculation. The material appears to have no particular systemic action.

Reduce Tomato Blight

According to a report from the Merck Sharp & Dohme Research Laboratories, griseofulvin effectively reduced Alternaria blight of tomato. The antibiotic appears to be at least locally systemic and persists in the tissues with inhibitory properties not less than seven days.

From the Experiment Station workers in Maine is the report that good control of potato seed-piece rots can be obtained with rimocidin sulfate dips. In laboratory tests potato slices were inoculated with *Phoma* and *Fusarium* species, important soil pathogens.

Certain synthetic antibiotics, particularly the pyridinethione compounds, appear to have promise. Reports from Michigan State University indicate that these materials gave effective control of *Pythium ultimum*, a soil pathogen important on greenhouse ornamentals. Of the pyridinethiones, copper hydroxypyridinethione (Omadine 1562) at 6:31 grms. per cu. ft. was especially interesting because of a residual effect which lasted up to eight weeks.

"Chew carefully and watch out for people."

Streptomycin Still Effective

Streptomycin for use in the control of fire blight is now a well known and established practice, but there are many new and interesting applications still in the experimental stages. For example, University of Tennessee workers report streptomycin sprays at 100 ppm to be more effective than the standard copper drench in the control of wildfire, a serious bacterial disease of tobacco. In beds of tobacco already infected, a 200 ppm streptomycin spray actually eradicated all visible signs of disease.

The U. S. Department of Agriculture also reports excellent control of this disease with a streptomycin spray applied at 200 ppm and intervals of one week. In another report USDA plant pathologists found that certain streptomycin formulations were more effective in the control of downy mildew of lima beans than straight streptomycin. Thus, a solution of Agrimycin 500 containing streptomycin and a neutral copper, each at 25 ppm gave much better control than did Copper A or streptomycin at the same concentrations.

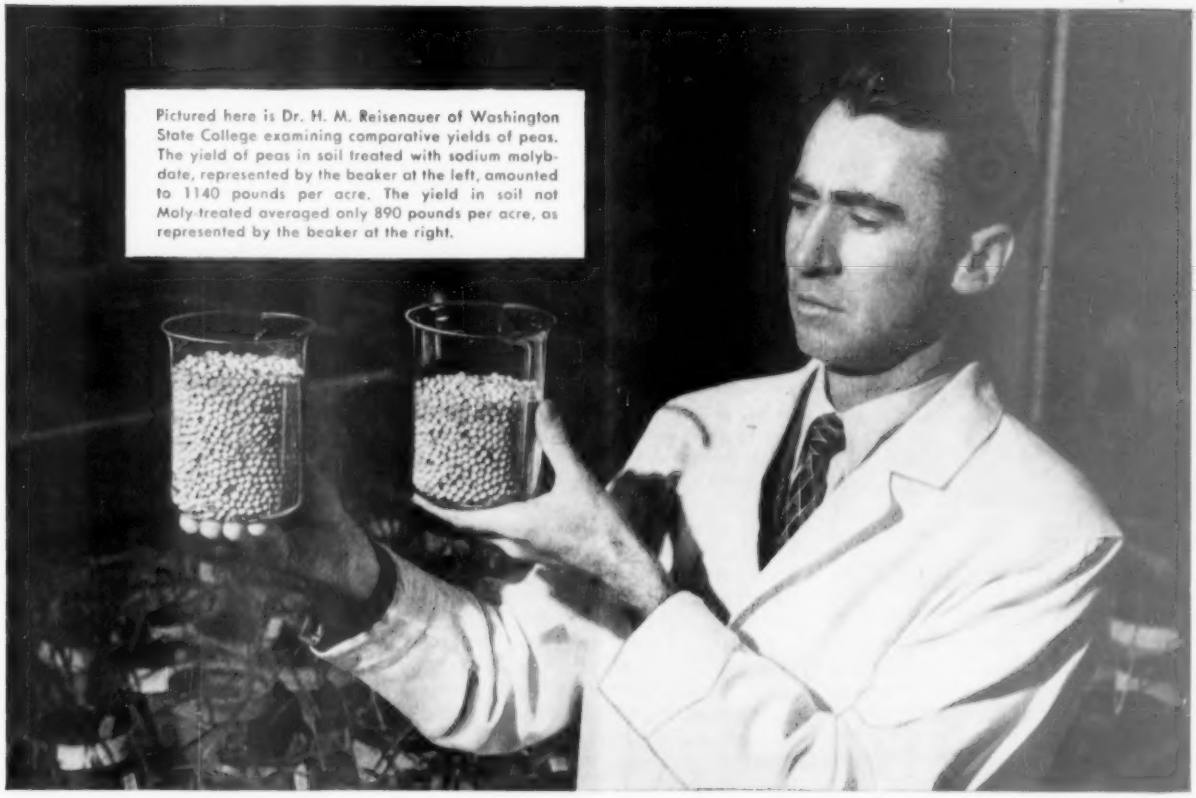
Dip Potato Seed

Maine Experiment Station workers have found an effective control for potato seed piece rots under commercial conditions. Potato seed was treated with nabam, dichlone, or captan, cut into seed pieces, and then dipped into a streptomycin solution. Essentially similar results were observed by scientists at Pennsylvania State University. Stands and yields were increased with one-minute dip solutions of these materials used alone and in combination.

Vapam Is Promising

Soil pathogens, long known as among the most difficult to control, are giving way to new soil fumigants.

Vapam, for instance, has shown considerable promise in the control of soil-borne diseases. Oregon State pathologists found that Vapam, when injected into the soil to a depth of 6 inches 10 days before planting, resulted in striking control of Verticillium wilt of potato in large scale field tests. Coincidental, but of consider-



Pictured here is Dr. H. M. Reisenauer of Washington State College examining comparative yields of peas. The yield of peas in soil treated with sodium molybdate, represented by the beaker at the left, amounted to 1140 pounds per acre. The yield in soil not Moly-treated averaged only 890 pounds per acre, as represented by the beaker at the right.

Pea yield increased 28% by use of Moly fertilizer

As a part of molybdenum deficiency tests which have been carried on since 1952, Dr. H. M. Reisenauer is demonstrating the value of Moly in stepping up the size, vigor and yield of peas.

Vigorous plant growth and greatly improved yield in peas have been obtained at the Washington State Experiment station through the addition of trace quantities of Moly. Dr. Reisenauer's experiments have shown that when peas are moly-starved the nitrogen fixation is almost negligible, and the plants are small and poorly developed. Moly deficiency results in fewer pods—lower yield.

By adding sodium molybdate to the soil, Dr. Reisenauer obtained vigorous plant growth and greatly improved yield. The pictures reproduced above tell the story.

Moly deficiency has been definitely proved in many areas in the United States

Field observations and tests show that a deficiency of available Moly exists in American soils in many locations. The study of whiptail in cauliflower, for example, has led to the discovery of Moly deficiency in New York, New Jersey, Pennsylvania, Delaware, Maryland, West Virginia and Ohio. Intensive work on yellow spot brought to light a Moly deficiency in the citrus area of Florida. And the incidence of yellow foliage and low protein content of alfalfa has been successfully corrected by the use of Moly on molybdenum deficient soils in South Carolina, Idaho, Washington, and New Jersey.

All crops need Moly

Many other scientific tests, conducted in the United States and abroad, show conclusively that Moly in available trace quantities is needed by all crops. These findings apply to such widely varying crops as tobacco, tomatoes, celery, broccoli, sweet potatoes, sugar beets and clover.

Practical help is now available to county agents for the conduct of Moly tests

In many parts of this country, not previously reported upon, county agents are finding indications of Moly deficiency in soils. We will be glad to supply test samples of sodium molybdate to county agents for test purposes. Write to Climax Molybdenum Company, Dept. 42, 500 Fifth Avenue, New York 36, N. Y., for our new folder: "Testing for Molybdenum Deficiency."

Shown here are pea plants grown in Moly-treated soil (Plant No. 1) and plants from untreated soil.

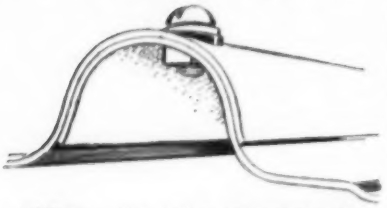
MOLY CAN BE ADDED TO ANY FERTILIZER BLEND

In recommending fertilizer blends you can always specify that certain quantities of sodium molybdate be included as an additive.

CLIMAX MOLYBDENUM

Will your new farm building be

BOLTED FOR BRAWN?



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able importance, was a good control of weeds with this treatment.

Trials in Colorado during the past summer on sugar beet, wheat, beans, cucumber, and cantaloupe have shown that Vapam applied as a soil surface spray before planting resulted in lower percentages of root rot, good weed control, and plants with much higher vigor and size. The material was applied at one quart per 100 sq. ft. and followed immediately by sprinkler irrigation.

Yields Are Increased

Beans and peas in treated plots yielded one-third more than the controls, while cucumber yield was nearly doubled. No real differences were observed in sugar beet tonnage but there was an increase in marketable cantaloupes, apparently associated with earlier maturity.

Pennsylvania State University reports effective control of potato scab with Vapam at rates of 50 and 100 lbs. per acre.

While the field application of Vapam is currently limited to high value crops because of cost, it is expected that prices can be reduced with more efficient production methods and when applications for the material have been extended.

PCNB Gives Results

There has been a significant advance in the development of more efficient seed-treatment materials during the past year. While a large number of materials are known to control the seed-borne phase of stinking smut of wheat, the control of soil-borne smut was another matter.

In field tests conducted cooperatively between the U. S. Department of Agriculture and five northwestern states in 1956 it was shown that both seed-borne and soil-borne smut can be controlled simultaneously with either pentachloronitrobenzene (PCNB) or hexachlorobenzene (HCB) used as seed treatments.

HCB formulations performed equally well when used at the rate of one ounce per bushel for the 40 percent preprations, and one half ounce for the 80 percent material.

PCNB (75 percent active) was most effective when used at the rate of two ounces per bushel. PCNB has also been reported as producing a highly significant degree of control of potato scab, even at 26 pounds per acre, by researchers at the Pennsylvania State University. Effectiveness did not appear to increase with increased dosages.

Control Late Blight

Observations made from extensive field tests by Canadian scientists indicate that maneb (Manzate, Dithane M-22) was much superior to its closest rival, Bordeaux mixture, in the control of late blight of potato when used at one and one-half lbs. per 100 gals. of water. On the basis of these tests, the workers conclude that the carbamates of the ethylene type were much superior to those of the dimethyl type.

Promising results in the control of mushroom diseases have been obtained in tests conducted by the U. S. Department of Agriculture. Water used for wetting the beds is simply chloronated at 100 ppm of available chlorine, starting when the mushrooms first appear. BK powder or

These past presidents of the National Association County Agricultural Agents attended the recent convention in Houston. Seated l-r: Horace Abbott, H. M. Nichols, Eugene Beck, E. V. Ryall, Rex Carter, and Fletcher Farrington. Standing, l-r: Joe Brown, Ed Bay, John Henry Logan, Leonard Kerr, and E. O. Williams.

sodium hypochlorite was used for chloronation.

Lime-induced iron chlorosis of peach can be corrected with applications of chelated iron, according to the Colorado A & M Experiment Station. Sequestrene 330 Fe (two-three lbs. per tree) and Chel 138 Fe (one-half lb./tree) produced complete correction of severely chlorotic trees when broadcast or potholed in the irrigation furrows around the bases of the trees. Best results were obtained when the materials were applied as early as possible in the spring, and just before an irrigation.

Better Days Still to Come

While it is not possible to report all the results of fungicide tests conducted during the past year, it is apparent from this brief summary that outstanding advances have been made in the development of new chemicals for plant disease control. Furthermore, the agricultural chemicals industry hints that research is just beginning on a new series of materials that have even greater potential for disease control in 1957.

Great strides are promised, not only in the development of more effective fungicides and bacteriacides, but with viricides as well.—*End*

"Careful, you're repeating yourself!"

★

Curtains Cut Chick Costs

Cooperative research by the USDA and the Indiana Experiment Station shows how to reduce chick brooder cost. The cost of brooding chicks in infra-red lamp brooders can be reduced about two cents per chick if side curtains made of the right kind of material are used.

White vinyl plastic, clear vinyl plastic, and 32-gauge aluminum sheeting are about equally effective in reducing production costs. Brooders without the side curtains required nearly 93 percent more electrical energy than the curtained brooders.

Now—it's so easy to level your own fields, fill gullies, build terraces and dams, maintain ditches! SOIL MOVER, world's No. 1 scraper, moves soil for only few cents per cu. yd. **Soon pays for itself!** "Saved me $800 on one job!" says P. G., Nebr. "Paid for itself the first week!" says R. S., Iowa. Carries big load with little power. Hydraulically operated. Built for lifetime use. Sizes for all tractors.

SOILEVLER. Levels, then packs soil. Operates in conditions that stop others. Has 16 great features.

SOIL DITCHER. 12" square nose cuts perfect U or flat-bottom ditch, 24" to 36" deep. Hydraul. controls.

FREE Folder, full details, money-saving prices, name of nearest dealer. Rush card today!

The **SOIL MOVER CO.**, Dept BF-1 Columbus, Nebr.
World's Largest Mfgr. of Agr. Soil Moving Equip.

CANCER WARNING

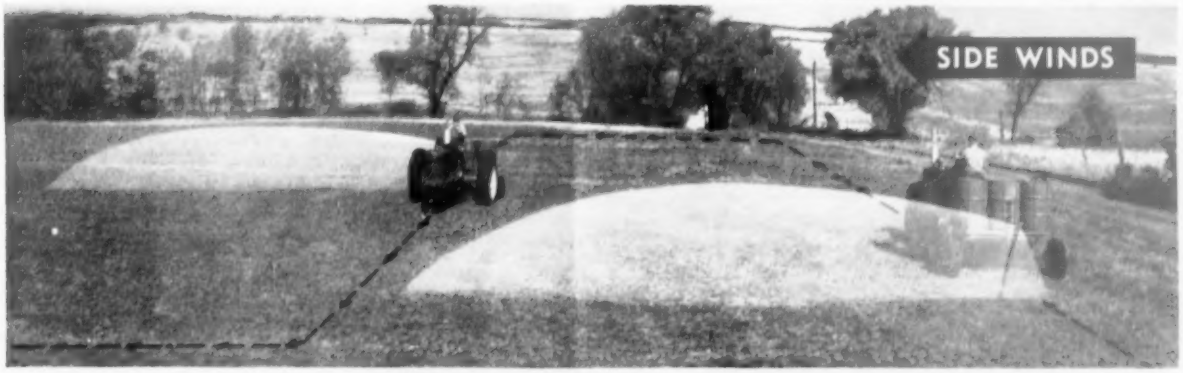
The Food and Drug Administration has issued a public warning that the Hoxsey treatment for internal cancer distributed by the Hoxsey Cancer Clinics at Dallas, Texas, and Portage, Pennsylvania, is worthless and may be dangerous to those who rely upon it instead of obtaining competent medical treatment. All persons who may be considering the Hoxsey treatment are advised to secure a copy of the warning notice.

Write to:

Food and Drug Administration
Washington 25, D.C.

This warning is an official notice of the U. S. Government.

Hanson's new 1957 sprayers do more for you!



Hanson Multi-jet...

...boom sprayers (21- and 31-ft.)! Economical and efficient for drop-nozzle work, underleaf coverage, band spraying, etc. Top quality at modest prices.

Hanson Brodjet...

...it's 5 sprayers in 1! Handles field, row-crop, orchard, roadside, livestock, spot spraying, etc. No booms—swaths up to 68-feet—no extras to buy.

Hanson Swath-o-matic...

. . . makes side winds work for you. Spray swath automatically switches from left to right so you always spray with the wind. Covers up to 40-feet in one direction or up to 68-feet with both nozzles open.

Rush coupon today—learn how Hanson's modern, 1957 sprayers can do more for you!

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Please send me Hanson's big file folder full of modern sprayer ideas!

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Your Annual Report– would you read it?

By D. M. Rutherford
University of California

Make your report worth while. It should be simple, direct, factual and friendly

● PREPARATION OF county annual reports destined for the files at headquarters did not seem to be the best use of man-hours by agricultural extension staffs. Assignment: See what can be done about it.

Instead of a painfully detailed report written according to traditional formula, why not tell the great story of Agricultural Extension—our story—to the people we serve? Tell them what Agricultural Extension has accomplished with their cooperation. Wouldn't that make a useful report?

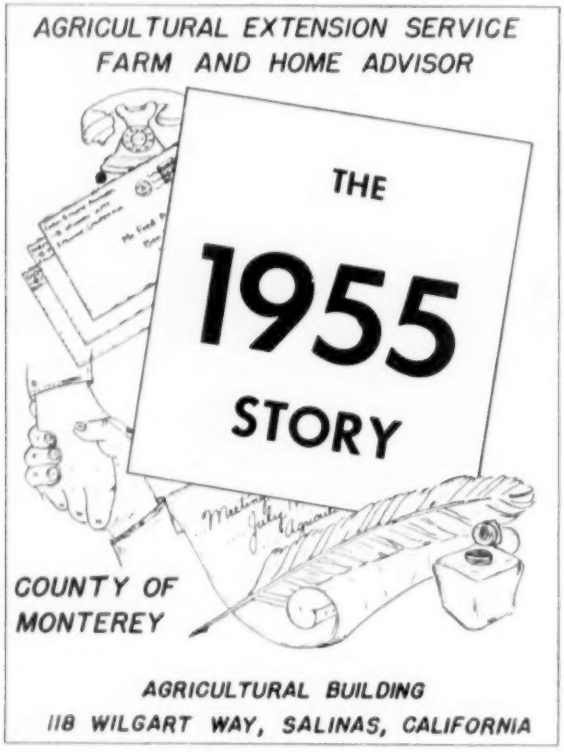
In talking over the problem with many county staff people who would have the job to do, it soon became plain that the formula was simple—in fact, no formula at all but a set of principles and suggestions, each county preparing the report according to local requirements.

Capture Reader's Interest

What is needed? First, a summary, highlights of the year's work, up front, to capture the reader's interest. Second, short reports on the various activities of the county staff, adding up to a well-rounded story of the year's achievements. Third, a few facts in numbers—statistics that will be of interest and show the scope of the work.

Incorporate any touches of originality which judgment and good taste recommend for making the report interesting and easy to read. Stress financial and other benefits accruing to farmers because of extension work.

AN ATTRACTIVE COVER . . .
They wonder what's inside.



First Pages Important

The first four or five pages make or break the report. They capture interest or they don't. Ask yourself: "Is the copy interesting and valuable enough to spend time on? Is it *comfortable* to read? If it came in the mail to me, *would I read it?*"

Don't fret too much about style. Never mind the music of words; more important is the crackle of facts. Make the report simple, direct, factual, friendly. Write it as you would talk, but avoid technical jargon. Use short paragraphs, short sentences, and tell your story with an overtone of pride.

One of the virtues of an acceptable report is brevity. If the reading time is much over 30 minutes, the report is likely to be too long.

Deadline jitters can be greatly reduced if a year-around plan is followed. As projects are completed or as progress reports are made, prepare, *as a matter of routine*, short statements for the annual report. Secure illustrations *at that time*. Accumulate copy in an annual report file.

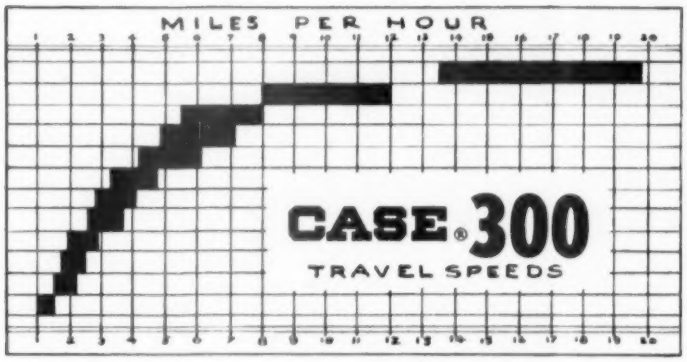
Staff Should Cooperate

If each staff member will write up to three or four short items about the work done (most valuable to the county, work of which he is most proud or which displays achievements

When you save time, you save money . . .

Plow 2¾ More Acres a Day

with overlapping gear speeds



You make man-hours pay more when you power your field jobs with the 3-plow Case 300. You never lose time poking along in a gear too low, never overload the engine in a gear too high. The Case system of overlapping gear speeds keeps engine power and ground travel in perfect balance. If the soil is mellow, you shift from 4th to 5th gear and plow 2¾ acres more in a day. If the soil is hard or sod too tough for 4th, you drop to 3rd and still plow 86 percent as much.

Besides this great time-and-money saving benefit, advanced Case engineering gives you a choice of engines for gasoline, LP-gas, distillate or diesel that lowers fuel costs; duo-control hydraulics for instant, accurate implement control; and speedy 3-point Eagle-Hitch with automatically stabilized depth and traction.

See Your Case Dealer

Get a demonstration of the 3-plow CASE 300 right on your own farm

Case Pivot-Action Plows mount in a minute or less on 3-point Eagle-Hitch, track true on contours, cut full width on curves, run at even depth by floating action. Break-away uncouples on striking stone, recouples by backing tractor.

Send for the Time-Saving Facts

Mail this coupon. Let us show you how the 3-plow Case 300 sets you up for savings, how the Case Crop-Way Purchase Plan lets you buy now. J. I. Case Co., Dept. A-187, Racine, Wis.

☐ 3-plow Case 300 ☐ 6-plow Case 600
☐ 4-plow Case 400 ☐ Mounted plows

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World's lightest, smoothest and easiest working insecticide duster. Weighs 1¼ lbs. Non-rust, all metal construction. One filling dusts 200 rose bushes. Throws 8 ft. dust stream. Nothing matches it. Fast seller.

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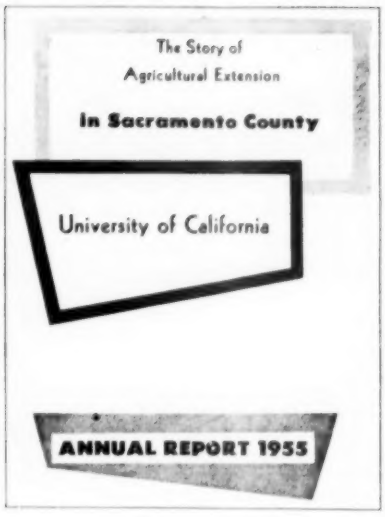
Use Liquid FORAGE-FEEN to kill worms fast. Cattle readily eat hay, ensilage or any other roughage sprinkled with Forage-Feen. Does a thorough, 1-day worming job—safely!

Self Wormer and Forage Feen are exclusive and original products of the Anchor Serum Co. of Ind. See your dealer or write for prices and details to:

ANCHOR SERUM CO.
OF INDIANA, INC.
INDIANAPOLIS 6, INDIANA
DEALERS—Territories Still Open

To Each of You
Best Wishes for a
Happy Prosperous
New Year



This is a simple cover that can be easily produced, is attractive, and gets attention.

well), this will probably provide all the copy needed. Make stories brief, factual, interesting, comfortably easy to read. Begin early, make a plan, hedge against unexpected delays.

Mimeographing, multilithing, or printing must be *clear, sharp* and *comfortable* to read. Otherwise the purpose is defeated. And you lose.

Six- to seven-inch lines of single-spaced standard typewriter type are not comfortable to read, but short paragraphs, giving more white space, help. Make up the pages in two single-spaced columns about three inches wide, using subheads and short paragraphs. Pay special attention to heads and subheads—put action into them.

Pictures Are Useful

The right kind of picture saves words, helps tell your story. Use captions to show the reader what you want him to see. Avoid group pictures or the "pawnshop window" (everything in it). Use action pictures, people about their work. Some of our best reports, inexpensive mimeograph jobs, have no pictures; but they do show originality and "flair."

Whenever to advantage and appropriate, mention the names of farm people working with you in extension service programs, especially those of cooperators in field trials and other active projects.

When the annual report has been compiled, edited, proofread and published, the job is by no means finished. The product has to be sold—put into circulation among representative local people. Present a copy of your report, in person if possible, to members of your county board of supervisors, the member of Congress from your district, and other elected officials and important people in the farm-business community of the area. Invite their comments.

Selling is a primary Extension function. We have a product of exceptional merit to sell, useful information for rural people about agriculture, home economics and youth education, and a fine record of performance. But it is well to remember that it isn't so much the ideas we have to sell that count, it's the ideas that people will "buy" from us that pay off—and that's what the report is about.

The Plan Works

Does the plan work? It does. Each staff, with the guidance of a few basic principles of journalism and public relations, is free to produce a report according to their best judgment of local requirements. After all, we are working with exceptionally able people. Why tie their hands?

It was no great problem to demonstrate that county annual reports written according to the suggestions outlined were much more effective and required considerably less labor than heretofore.

The reports are a credit to the county staffs, and we have been proud to show them. Especially gratifying were the many touches of originality which appeared in the reports—imagination at work.—*End*

★

Weber Honored by Editors

Dr. A. D. Weber, dean of agriculture at Kansas State College, Manhatten, Kans., was recently awarded the American Agricultural Editor's Association Distinguished Service Award.

The award is presented annually by the editors of the nation's farm publications. It is given in recognition of outstanding service to American agriculture and country life.

Born on a Kansas farm, Dr. Weber has risen to be one of the nation's leading authorities on livestock. He probably is best known to the general public as a livestock judge, being the only American to judge the fat steer classes of the International, a task he has performed the last nine years, including this year.

★

Study Rotational Grazing

The merits of rotational and continuous grazing with lactating Jersey cows was the basis of a three-year study at the Ohio Agricultural Experiment Station. Milk production per cow and barn feed consumption were not significantly affected by the grazing method.

Advantages were: (1) More com-

plete utilization of forage; (2) legume stands are maintained for a longer period of time; (3) the forage is of higher quality; (4) rotationally grazed pastures are less seriously affected by drought.

The disadvantages of rotational grazing are: (1) Cost is higher; (2) better managerial ability is required; and (3) the advanced stage of maturity reached by the first growth of forage in the spring becomes too mature for best quality and palatability before the second growth of the first field is ready for grazing again.

★

Rats Come High!

The annual room and board cost for four rats is about equal to what a farmer pays for a ton of commercial feed in Iowa, says Harold Gunderson of Iowa State College. The annual cost of the grain eaten and contaminated by one rat is conservatively estimated at $20.

IDEAS that WORK

Pipe Fitting Board

Simple plumbing is something that every boy should know. Before you can talk plumbing effectively, your ag students must know the different pipe fittings and their sizes.

For years I have used a pipe-fitting display board in my shop to teach boys the art of identifying fittings and their sizes. I picked up the various fittings of different sizes, at no cost whatever, from farmers who had them left over from jobs or from plumbers who had some on hand with imperfections or corrosion. I wired them onto a piece of blackboard, four by four feet, and nailed the whole thing on the wall of the shop.

Each year I have freshmen ag boys write the name and size under each of them with chalk, and later rub the names out. When I get ready to teach fitting identification, I take the class into the shop. With a pointer I drill them on nomenclature of the fittings on the board.

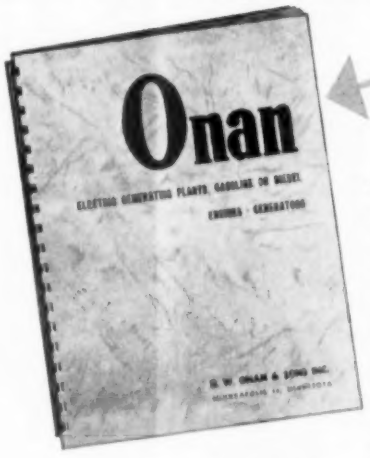
From a box of loose assorted fittings I test the boys by laying out 20 fittings, numbering each, and having them write the name and size of each. Sometimes we take this board down and use it in demonstrations or talks before organized groups, where FFA boys appear.—*F. B. Curry, vo-ag teacher, Burton, Tex.*

Do you have an idea that works? Better Farming Methods will pay a minimum of $5 for accepted ideas or teaching techniques that you have used successfully in YOUR work with FFA, 4-H or farmers.

Here are the answers to many questions on

Standby Electric Power

for farm use!



This helpful kit of literature is **FREE** *for the asking.*
Write today!

What type of generating equipment is most practical? How large a unit does the average farmer need? The answers to these and many other questions are contained in this kit of literature prepared specially for county agents and teachers.

The greatly increased dependence of the farmer on electricity makes standby electric power essential. The information in this kit will help you be more helpful to those who come to you for advice. Ask for folder SP-1070.

Describes many types of generating equipment

Water-cooled electric plants

Air-cooled electric plants

Tractor-driven A.C. generators

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Are You Satisfied?

Suppose you saw an open door and it said, "Employment opportunity here." Would it tempt you?

Have you ever had a notion you'd like to do magazine work? . . . editing or selling advertising?

This company now employs five former vo-ag teachers—four former extension poultry husbandmen. They like it here. Maybe you would too.

No . . . there isn't a single opening on any of our seven magazines now. But it could happen at any time. Just a few months ago, one of our advertising men got a better job. To replace him, we hired another vo-ag teacher at a good increase in salary for him.

Commercial companies frequently contact us for men with agricultural training. We have helped many men in this way to better employment.

Now . . . if you want to be considered for future employment here—write us a letter asking for an application form, which we will treat confidentially.

Abraham Lincoln is reported as having once said, "I'll prepare and maybe my chance will come."

It did. How about you?

We publish Poultry Tribune, Pacific Poultryman, Hatchery and Feed, Turkey World, Broiler Growing, Poultry Processing and Marketing, and Better Farming Methods.

Write E. E. Ruther, Personnel Manager, Dept. BFM, Watt Publishing Company, Mount Morris, Ill.

For Judging Pictorials
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Better Farming Methods
Sandstone Building
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●

WORLD'S LEADING DESIGNERS AND PRODUCERS OF FARM SPRAY NOZZLES

Teaching Aid

Show Your Farmers How Water Runs

By John F. Wilson

Soil Conservation Service
Jefferson, Ohio

● FOR SOME TIME I searched for a teaching aid in surface drainage work to supplement colored slides and the blackboard. Last winter, I devised a model that lends itself readily to illustrating diversions, twin waterways, collection ditches, turn strips, land smoothing, and bedding systems; all of which are important surface drainage practices.

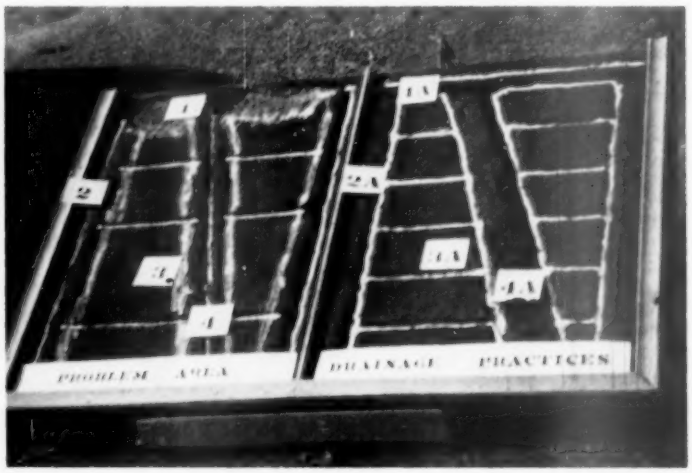
Materials used consisted of one piece of one-quarter inch plywood, 2 by 15 inches, one piece of three-quarter inch plywood, 21 by 32 inches, a large sheet of coarse sandpaper, a gallon of sand, one-half pint motor oil, 10 foot by three-quarter inch molding, salt shaker with an enlarged hole in the cap, salt, glue, and 6d finishing nails.

The sandpaper is glued to the three-quarter inch plywood. (This helps to keep the material from slipping out of place when tilted for display.) The molding is fastened around the edge and across the middle of the board with finishing nails. Sand and oil are mixed together and spread in a three-eighths inch layer over the board. (Oil darkens the sand and allows it to be shaped and firmed into position.)

The small piece of plywood is used to compact the sand and to shape the deadfurrows, ridges, depressions, and channels. The salt is used to illustrate water laying on the field or running in the deadfurrows and waterways. One side of the large board is used to show common surface drainage problems, such as water backing up from improperly constructed cross-ditches, drainage blocked deadfurrows by high turn strips at the field ends, seepage onto the field from areas above, etc.

The other side of the board is used to show the drainage problem answers. This consists of illustrating how a bedding system is laid out, constructed, and maintained; how twin waterways and diversions are constructed and used; and the purpose of collection ditches inside the turn

(Continued on page 47)



This illustrates the teaching aid used to show good drainage practices. It is relatively easy to construct, and can be used almost anyplace to show farmers how to plan for good water runoff. A simple base can be made on which to set this teaching aid so it can be easily seen by a seated audience.

PROBLEM AREA

1. Water spills onto field from adjacent, higher area; wooded areas are especially troublesome as slopes are deceptive and seepage continues for several days or weeks after rain has ceased.

2. High turnstrip built up by previous plowings and cultivation prevents water from entering collection ditches at end of deadfurrows. Deadfurrows usually need to be fairly deep at this point and aside from being difficult to cross with machinery, are often blocked off with wheel ruts. This calls for a hand shovel job to keep them functioning.

3. Irregular and too wide lands drain slowly and make lost time and poor crops if it requires extra rounds to finish a deadfurrow or a corn row happens to be in a deadfurrow. Wide lands are more difficult to establish grade and eliminate pockets within the land.

4. Hastily plowed ditch or even a single channel waterway with spoil moved out to each side prohibits movement of water into the channel. Water backs up on either side, ditch is difficult to cross with implements, and at least part of the poor drainage persists.

DRAINAGE PRACTICES

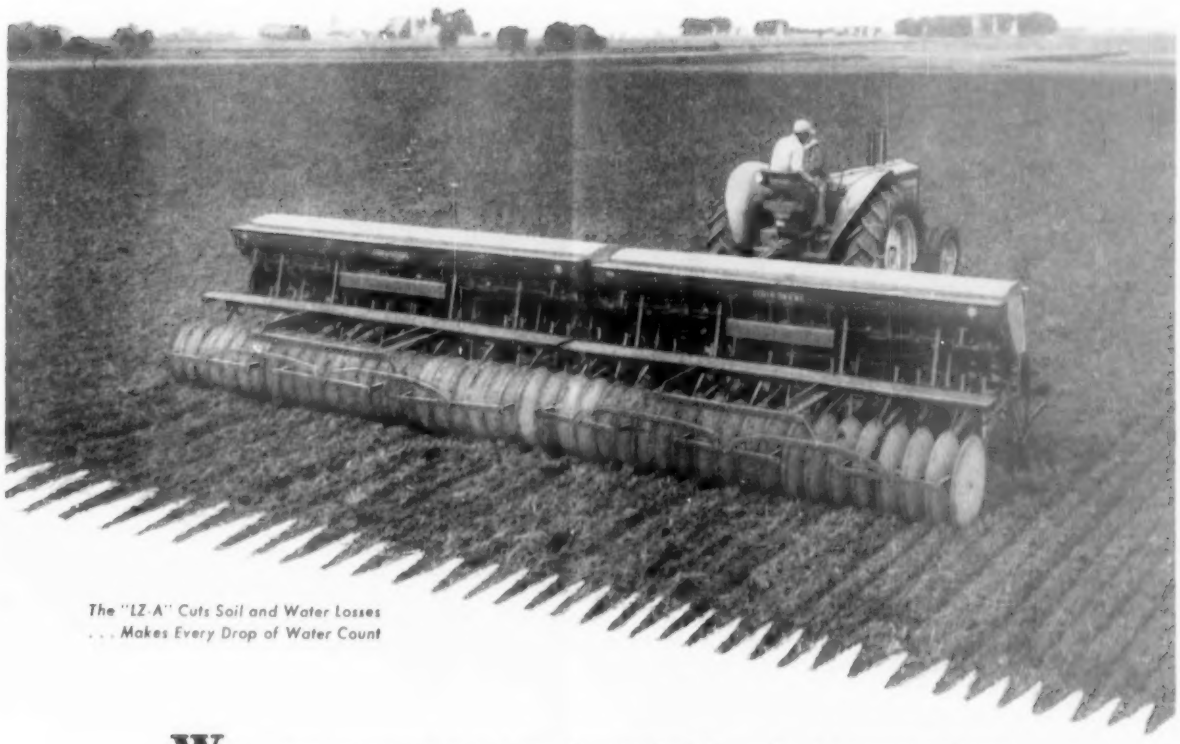
1. A diversion is designed and constructed to prevent runoff onto the problem area. This is built as close to the fence as possible with the spoil turned downhill.

2. Constructing a collection ditch at least 20 feet inside the ends of the field, turning the spoil toward the end, provides a good outlet for each deadfurrow and makes easy travel across field ends. This type collection ditch, located within the field, is easily maintained with tractor and plow.

3. Lands should be uniform width, narrow enough to get some lateral movement of water into deadfurrows, and where possible, a width that will fit the plows, corn planter width, etc., conveniently. (This is a good place to explain the establishment and maintenance of permanent-type beds if they are needed.)

4. The twin waterway is one of the most useful tools available in surface draining work. In wide, flat swails, it does a much more complete job of draining than a single channel. It creates a place to put the spoil from the channels, is easily crossed with machinery, and easy to construct and maintain.

A Drill That Fights Wind Erosion



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Farm MECHANICS

for school and on-the-farm

Use a Shop Manager for Better Results

By T. J. Wakeman
Virginia Polytechnic Institute
Blacksburg, Va.

● ARE THERE TIMES that you find shop tools on the benches, arc welders left on, pressure on the acetylene gauges, dirt on the floor, windows open, students on their way, and you alone?

Taking another look, you may see unfinished projects here and there. What kind of feeling does this give you? What kind of attitude do you have when you face this picture the next morning? What is the result of this situation?

The students become careless, quality of workmanship goes down, the teacher becomes disgusted and finds he is overworked. He may even penalize the boys in grades. The situation is not much less than "disorganized confusion" eventually resulting in a hotbed for ulcers and worse to follow.

Why Does This Happen?

What is the cause? We know it is the teacher and no one else. We also know that our students will join us in organizational practices or they will join us in confusion.

What can we do? We can, and should, place the problem before the students—all-day, young and adult farmers. Ask the groups: (a) If they want you to place the tools in the racks, sweep, close the windows, or to teach; (b) what their idea would be of each member serving as assistant manager then as manager periodically; (c) in what ways the department can be made more attractive; (d) in what ways the department can be made more educational; (e) how the equipment can be kept in good working condition; (f) how we can keep supplies available at all times.

For answers to the above questions you will get many practical suggestions. You can ask other lead questions that will produce results. Here are some of the answers you may get:

Use of a manager and assistant for each group for one to four meetings. This adds interest of all that take part Each member should be given at least two meeting assignments; once as assistant manager and once as manager. A paid manager will not function because individual interest will be lost.

In your organizational meetings the duties of the manager and his assistant should be decided upon. In turn, the duties of the members will be brought out, thus, there should not be any misunderstandings. When misunderstandings arise, be certain that all of the groups have a say in the solution to add interest and knowledge to each group member.

The class members will be better students, they will respect you more as a teacher. They will also be more cooperative and understanding after serving as assistant, then manager.

"My Grandfather got rich from the land without all these new-fangled ideas. He just plowed right up and down the hill until one day he struck oil."

Here are some suggestions for duties of the shop managers. (It should be noted that these duties are in addition to his regular class work.)

1. He should make notes of all supplies, equipment parts, light bulbs, etc. and report to the teacher.

2. He should have all supplies ready for the classes, should know where all the teaching materials are.

3. He should check the fire extinguishers and fans and ventilation.

4. He should meet the visitors. If it is a fellow teacher that wants a flannel board made, look over the schedule with the teacher and see how it could fit into an educational program. He may refer the visitor to the teacher.

Listen to Suggestions

5. He should humbly receive any suggestions other class members should make to him. He should never tell a class member to do something, instead he should ask him to do it. An example of this would be placing tools in the racks after using them.

6. Have an understanding with the groups that it is not the duty of the manager to do the shop chores. Make it plain that it is the duty of the manager to see that it is done.

7. It should be decided that all members near an unoccupied work area should participate in the cleaning and putting it into order so that the manager will know what to do about such situations.

8. The manager should be certain that there are adequate brooms and sweeping compound available.

Label All Containers

9. There should be labeled containers for rags to be destroyed, rags to be cleaned, floor sweepings, shavings, junk metal, etc. so the manager can see that the cans are used properly.

10. The manager should blow the whistle when the teacher wants the group to assemble. When the students

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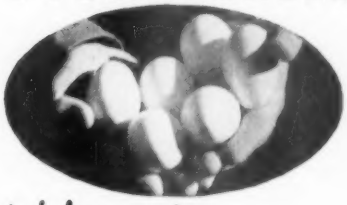

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have five minutes left to work, blow it again. He also blows it to dismiss the class after getting the instructors permission to do so.

In summarizing, the assistant helps the manager. The manager helps the teacher to do practically everything except teach. While the manager is helping the teacher there should be learning realized that will carry over to the home farm shop. Using a shop manager is good teaching practice. This effort will give you more time to teach.—*End*

★

Carbon Dioxide for Eggs

In Minnesota tests, hen eggs given a carbon dioxide treatment within four days after they were laid delayed a breakdown of the white and yolks.

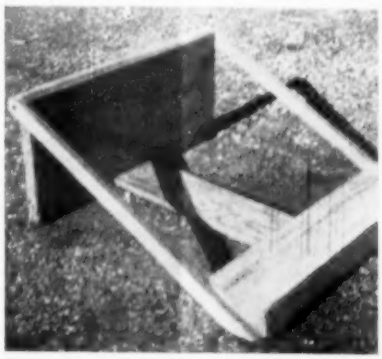
They were exposed to a 50 percent carbon dioxide-50 percent air mixture in a gas chamber for 90 minutes. Then came a coat of oil to prevent carbon dioxide from escaping. These eggs kept for 12 days after treatment at 75 degrees.

More work needs to be done, but this indicates a method that will be relatively cheap for treating eggs.

★

Show Farmers

(*Continued from page 44*)



Here you see the easy base that can be made to support the teaching aid. Almost any shop will yield the scrap lumber necessary for constructing this stand.

strips at each end of the field. Practices can be varied according to the problems involved.

I have used this successfully on TV programs and in group meetings of vo-ag students and farmers. It is most effective to have the "problem area" constructed beforehand. Then install and explain the recommended practices and show how the water moves off the field with the audience looking on. A base may be constructed 15 by 15 inches and 7 inches high at the back in order to tilt the model at a 30 degree angle for easy viewing.

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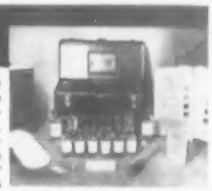
FARM OUTFIT



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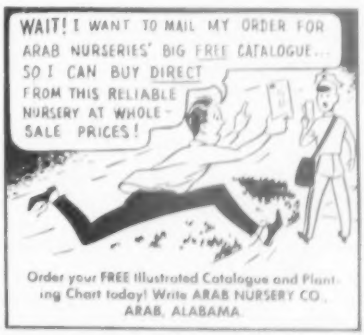
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Hercules Announces Award Winners

At the recent 4-H Club Congress in Chicago, the Hercules Powder Company announced the six national winners of $300 college scholarships. They sponsored the National 4-H Entomology Awards Program.

This is the fifth year of competition in this contest. Forty-five states were entered. National winners came from Connecticut, Illinois, Mississippi, North Carolina, Oklahoma, and Wyoming.

State winners received, as their award, an all-expense trip to the 4-H Club Congress.

- - - - What Will Vo-Ag Be Like in 1976? - - - -

(Editorial begins on page 50)

to say that you can only work with farm people. By so doing, you continually work with your own minority group—one that may even diminish further in numbers.

Too, you have a definite stake in the understanding and appreciation that ALL people have in your industry—agriculture. If for no other reason than a selfish one, you ought to be anxious to see that others understand your problems, your goals, and what agriculture means to all Americans. And who benefits? The farmer—the one your program is geared to serve.

Here Are Two Possible Courses

2. *This two-pronged program will consist of agricultural sociology for all freshmen and sophomore boys and girls.*

I think it is not far fetched to believe that there is as much education for youth in this subject as others we teach. I think it has a very definite contribution to make to the two reasons mentioned earlier as the basis for our public school system. In a rapidly developing agriculture, would you deny that such would not be important to a minority group that must depend upon all the people for its support and well being? And why haven't we a responsibility to all the people of our community as well as we have to farmers?

I know. Some of you have already discarded the idea on the basis of federal funds, reimbursement, and other closely associated reasons. But don't be too hasty. This alone can be the excuse of only those who prefer to think they have reached the ultimate of success and service. This cannot defeat the idea if it is sound from the position of both education and agriculture.

3. *From the above course, those who wish to go further in farming and agricultural study will choose vocational agriculture in their junior and senior years.*

Here you will begin to concentrate on those youth who want to pursue agriculture as a life's work. It may be as a farmer, or as one who will eventually go into industry associated with agriculture.

In this two-year course, you will stress the areas of business management, capital requirement, wise use of credit and how it fits into farming and agriculture. The project program will be more closely designed to emphasize and show the above relationships than it will to emphasize production techniques and contest showmanship. For in 1976, this will be the "crux" of farming. Here is where farmers will make or break their operation.

Let's be honest with ourselves. We can't possibly "prepare a boy to farm" even in 1956. How in the world will that goal be achieved 20 years from now? *In a highly specialized industry, you don't prepare a boy for an occupation in four years, particularly when those years find him from 13 to 19 years of age.*

In a highly specialized field, such as agriculture, success is not measured on skill alone. The same holds true in other fields. The boy who succeeds is the one who has a well-developed and trained mind. And for some the only place they will get a smattering of training in this field is in high school.

I, frankly, have seen too many boys who could hammer a nail, but couldn't spell; who could punch a cash register, but couldn't figure; who could tackle a dummy, but couldn't write; who could plow a straight furrow, but couldn't stand up to speak; who could fix an automobile, but couldn't write a check.

When only 54 percent of high schools today have students taking science; when 55 per cent of them take mathematics; when one-half of our schools offer no courses in physics, one-quarter no physics or chemistry; I think we should stop to consider the fact we might be selling our boys and girls short through our high school programs.

Coming: A Strong Adult Program

Agriculture is far more dependent on boys with math, science, physics, and chemistry background than it is on those who are trained in so-called "skills." Our vocational program in agriculture will be no stronger than its contributions to these fields of endeavor.

4. *In 1976, you will have a well-developed, operating, and successful post-high and adult course in vocational agriculture.*

Here lies the most fertile field of development. Here is where you have the greatest contribution to make—to those who are actively engaged in or preparing to enter the business of farming.

Too long you have limited your program to teen-age high school boys. And you only have developed a half-

way program with adults. It has been the tag end of your day-school program.

In this area is a great fertile ground for development of "community college" or "area vocational" schools. Each town may not have one, just as many schools do not have vo-ag departments. But such schools would draw from a larger area than just one community. This has great possibility, I believe, and will be geared to the adult level of "operating" farmers.

5. *In 1976, those taking a full course in agriculture in high school will have the necessary requirements for college entrance in any of our advanced schools.*

This is not true in every instance today. We have accepted the opinions by some that if you couldn't get along in other school areas, or weren't too smart, take ag. Consequently, a boy following a strict ag course in his high school today may not be accepted into some colleges.

This will be corrected. Agriculture will be recognized and will change its course, and its relations with the overall objectives of high school training, to be accepted and acknowledged as full college preparatory training.

Your Lab Will Be a Farm

6. *In 1976, as a part of the vocational training in agriculture, the vo-ag teacher will stress and devote time to counselling services with students, helping them choose a direction in the field of agriculture best suited to their temperament and abilities.*

Some of our people are beginning to talk about this now. It will become of age by 1976, and form a standard part of vo-ag training. This will provide a distinct service to the youth and his education, and also to the field of agriculture. It is needed now—will be required then.

7. *In 1976, most schools will have a farm that will serve as a laboratory for all agricultural students, vocational and nonvocational.*

Many of you will shake your head when it comes to this subject. Yet, in so many instances, a school farm today has been an after-thought, rather than a planned part of vocational training. In the future, it will he a laboratory, where all the school at times might find use for its facilities.

It will not become just a place for boys without project opportunities to keep a few head of livestock. Here is where many youth will get a better understanding of just what agriculture is, how important the job of the farmer is to our way of life, and a technical lab for the boy who is majoring in agriculture.

Schools Will Employ Two Teachers

8. *In 1976, most high schools offering vocational agriculture will employ at least two teachers, one for day school work and counselling, and one for adult work exclusively.*

This will form a one-two punch that will be hard to beat. It will recognize as a definite part of the vocational agriculture program the needs of farmers and young men planning to some day operate a farm of their own. An adult course will be just as well planned, and carry through the vocational requirements, as we are now trying to do in day school classes.

9. *In 1976, vo-ag teachers will find opportunities to serve large farm operators by conducting an in-service program for their employees.*

As the "integrated" or "contract" idea of farming grows and becomes established, you will be called upon so serve the producers and farmers who are a part of such a credit and finance system. You will be asked to bring and teach them the new developments in farming, help them do a better and a more efficient job. This will be a challenging job, serving to keep you up to date on all parts of the agricultural field.

10. *By 1976, most farmers will be buying their production skills, and concentrate their abilities on business efficiency.*

Farming is becoming more and more like business—buying all of its tools of production beyond the home fence. It is not a matter of trying to produce food, fiber, and other material for farm and home use. Today it is more efficient to purchase these supplies elsewhere.

Production will be still important—but you can buy it! Even now, in breeding stock, feeds, seeds, equipment, etc., you can buy most of the elements of good production. Much of the rest must come from the efficient management of the farmer, something you and he have not quite mastered as yet.

Study Agriculture Carefully

This area will take a tremendous amount of effort and work on your part to understand, comprehend, and then teach. *It will mean that much of today's effort in production skills, contests, and related subject matter will be of secondary nature.*

In conclusion, let me again emphasize the fact that none of us really appreciates, understands, or even knows of the tremendous strides agriculture is making. We catch snatches of it from time to time, but we fail to intelligently comprehend what it all means. Agriculture is not rapidly progressing—it is leaping forward in seven-league boots. Again I say, *it is absolutely essential that in your planning for vo-ag you consider, study, and evaluate what is happening in the industry of agriculture.*

And in conjunction with this, your people in your community should have every opportunity to sit, study, and help plan your program. So often we have assumed we knew what the people not only wanted, but should have. This is not the way to progress. Every community will yield a reservoir of good, intelligent, far-sighted, cooperative, and willing people who should be consulted and asked to help you.

You Must Take the Lead

The tendency in many places will be to let others do it. Too many will try some short-term proposition in the hope that it will answer for them what seems to be a threat to their present program, their hope for little change, and their scramble to maintain the status quo.

In many instances the easy thing will be to let the government do it. Help, yes, but overall direction, no. *You need the individual effort of all vo-ag leaders.*

I have little time for those who moan the decline of farm people. I have little time for the prophets of doom that see vo-ag closing unless you scramble for all sorts of programs in the hopes of holding boys and creating jobs. I have little time for those who wish the past 20 years to set the example for the next 20. I have little time for those who want to administer the letter of the law without regard of the changes in agriculture, people's needs, and the intent of the program to serve.

I have little time for those who have a panacea to solve your problems and offer quick schemes for salvaging jobs and men. What is needed is wise, thoughtful, intelligent, diligent, and resourceful study by those in the field of vocational agriculture to plot the future course in close relationship to agriculture and the people who engage in it.

H. E. Schaller

What Will Vo-Ag Be Like in 1976?

(The following is the address delivered by H. L. Schaller, editor, Better Farming Methods before the National Vocational Agricultural Teachers' Association Convention, St. Louis, Mo., December 5, 1956. It is being reprinted here at the request of NVTA Officers and many vo-ag teachers present at the convention.)

IT IS NOT MY ATTEMPT to tell you what your profession should do, what it will be like, or give you answers to problems confronting it. I bring only some of my own beliefs, impressions, and opinions. These have been formulated after traveling into many states this past year, talking with farmers, teachers, ag leaders, and industrial men. These predictions also are tempered by the opinions of the editors from our other Watt Publishing Company magazines. These men have traveled extensively throughout the entire United States during 1956, and all are actively engaged in the industry of agriculture.

To begin with, I would like to list three component parts that I think should be considered in any discussion of vocational agriculture. They are: *People; agriculture;* and *vocational teaching.* These three have a distinct and important relationship. In their consideration, it is necessary that we look at them briefly in the exact order listed.

Service Is Your Business

Why? Because, first of all, your profession, vocational agriculture teaching, is the servant of the other two. Your job is to serve both your industry, and the people in your community. And of the two, people rank as the most important.

They are the reasons you exist. If it were not for farmers, businessmen, and others in your community, there would be no need for you to practice your profession. They have top priority in your field. These people form your community. They are your foundation. Upon their interest, and their faith, you succeed—or fail.

It is important to realize, too, that your program is not sufficient by itself to satisfy all their wants, desires, and needs. You are only a part of what they want.

Therefore, you are really an integral part of a very important, highly developed, and necessary part of our society—the public school. No other country in the world has developed so successfully a school system for all its people as has the United States.

Of the three important reasons for the public school coming into existence in the beginning of our country, two are still not only important, but highly essential. They bear much of the success or failure our country will experience in the future.

These Are the Goals

These two reasons are to help people (1) *develop into all they may possibly become;* and (2) *develop into a unique kind of citizen for a unique form of government.* Part of your responsibility is to see that your program aids the realization of these two aims of our public school system.

Would you care to look at "farm people" in 1976? For what it's worth, you might expect to find less than 5 percent of the people on farms. Too, you will find the greater percentage of those engaged in farming will be college graduates or college trained, particularly those who are planning to enter farming in 1976.

Now let's turn to agriculture. Here is where so many people stub their toe. They try to plan a program for their profession or industry before they have studied their field carefully. Before you decide what would be the best future course in vocational agriculture, you ought to ask yourselves: How is agriculture going to change?

First, a bit of a review. Today, agriculture already is "big business." Invested per worker is about $20,000 to $40,000. This compares to $15,000 in industry.

Contract Farming Is Here to Stay

Today we see a new development appearing in agriculture, too. This is the oft-heard phrase of "integration," a development that has caught fire in the poultry industry. If you haven't heard of it, or know what it is about, you ought to take time to review this development. It could, and we in our company believe it will, have a broad effect on the entire field of agriculture—particularly farming. Basically, it is an application and a method of credit use in agriculture, much like that used in the development of industry.

With this background, what of agriculture in 1976? You might say that your guess is as good as mine. And it probably is. But for the sake of this discussion, here are several predictions.

1. The average farm will increase in size by about 100 percent.
2. Farming on "contract," or the use of credit by the method mentioned above will spread to other areas of general farming and become an accepted practice in many places, and with many products.
3. The family farm will still be with us.

In passing, let me mention just briefly this so-called "family farm." We are not faced with a problem of family versus corporate farming. Rather, we need an intelligent definition of the family farm in light of agriculture today.

Count Units of Production

It would seem to me to be wiser *to define the family farm in terms of output in units of production per worker,* rather than class it on an acreage basis.

Who among us would say that the family today can't operate successfully more acres than it did 20 years ago? Of course it can. And many are doing it. The family farm is "American" and I have no doubt but what it will continue on the agricultural scene.

Now, what does this mean to vocational agriculture? What of your program? How will it change?

At the outset, let me say that you hold the destiny of your program. You as individual teachers, can do much to determine where it will go, how strong it will be, and how effective its program.

So, here are a few predictions with these reasons to back them up.

1. *By 1976, vocational agriculture will be a two-pronged program designed for all students in every school where it operates.*

Agriculture is already a minority. Your people are a minority group. Yet you are an important, a very basic part of the entire American economy.

It seems short-sighted, in fact downright negligent,

(Please turn back to page 48)

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